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THE INFLUENCE OF GALL-BLADDER AND OTHER INFECTIONS ON THE INCIDENCE OF CORONARY THROMBOSIS *

BY

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When opening a discussion on the pathology of coronary thrombosis at the Annual Meeting of the British Medical Association at Bournemouth in 1934 R. T. Grant stated that: "It has often been suggested that coronary thrombosis may be precipitated by some infection, either local or general, but while cases have been recorded supporting this view there is not sufficient evidence, either clinical or pathological, to show that it is the general rule." He and the other speakers all emphasized the established fact that atheroma and thrombosis are the two main factors in coronary occlusion, and that the syphilitic and embolic occlusions are less important. Histologically the thrombus in coronary occlusion is generally found attached to an atheromatous ulcer.

The increase in atheroma and arteriosclerosis in recent years is undoubted, but I find it difficult to explain, by this factor alone, the great increase in the number of cases of coronary occlusion. Cases had been found at post-mortem examination and described in the literature during the latter part of the nineteenth century, and a few cases had been recognized clinically prior to the great war. But these must have been rare, for as students I doubt if many of us remember seeing cases which, with our recent knowledge, we could classify as cases of coronary thrombosis. In 1920 Pardee[1] described a curve in the electrocardiogram which was characteristic, and in this country the work of Parkinson and Bedford[2] has done much to further the knowledge of the symptoms, clinical signs, and electrocardiographic changes of this condition. Many papers have been published, and the fact is established that this disease, formerly regarded as a rarity, is now an everyday occurrence. Though the majority of cases occur at an age when atheroma is most commonly found, cases have been described at an age when atheroma is rare. Many have a previous history of angina or other cardiac symptoms, while others have no previous warning of impending danger. In a series of 100 cases Parkinson and Bedford[3] found that about half of these had had no previous attacks of angina pectoris, which, they think, is possibly due to the fact that the existing atheromatous changes were not sufficient to produce pain on effort.

My object in writing this paper is to try to prove an association between infection and the great increase in coronary thrombosis, while in no way disputing the fact that atheroma is increasing. Infections of the gall-bladder are those most commonly associated with this serious cardiac lesion.

*Read as the chairman's address to the Belfast Division of the British Medical Association, October, 1935.

Coronary Thrombosis and Cholecystitis

Vest,[4] in an article on the anginoid symptoms of gall-bladder disease, states that there are two theories as to why a diseased gall-bladder causes cardiac derangement. First, the presence in the blood of an increase of bile salts, bile pigments, and other substances in acute gall-bladder attacks is said to be injurious to the heart muscle; and secondly, the infected gall-bladder acts as a septic focus. He found that in attacks of acute cholecystitis the pain is often referred to the praecordium and to the left shoulder and arm. Babcock[5] in 1909 described chronic cholecystitis as a cause of myocardial failure. This effect on the myocardium he attributed to biliverdin and to bacterial toxins circulating in the blood in chronic cholecystitis, and also to the fact that an increase in bile salts raises the blood pressure. In another article, in 1919,[6] he again emphasizes the close relationship between the heart and gall-bladder disease. Riesman[7] in 1907 described the onset of murmurs during an attack of biliary colic, and advised special care at operation owing to the possibility of a weakened myocardium. Flint[8] in 1920 also drew attention to the tachycardia found in cholecystitis without jaundice, attributing it to increased amounts of bile salts in the blood, a bradycardia being found in cases with jaundice as the bile salts are lessened. That bradycardia without jaundice can be found is shown by a case reported by Carmichael.[9]

Schwartz and Herman[10] in 1931 published a series of 109 cases of cholecystitis, and found that 63 per cent. had myocardial disease. Rolleston[11] has also confirmed the view that the heart is often seriously affected in gall-bladder cases, while Willius and Brown[12] found disease of the gall-bladder associated with coronary sclerosis in 24 per cent. of their cases. On the other hand, we find Leech,[13] in a series of 116 consecutive cases, of which eighty-nine were cases of chronic and twenty-seven of acute cholecystitis, concluding that there was no definite relationship between gall-bladder disease and cardiovascular disease, but a suggestive relationship between obesity and gall-bladder disease. Roberts,[14] in an article on the diagnostic relation between cholecystitis and heart disease, forms the following conclusions:

1. Patients with diseased gall-bladders may present symptoms of early heart failure, or angina pectoris, or both.
2. In middle or old age heart failure or angina pectoris may be produced by a diseased gall-bladder.
3. In both conditions a diseased gall-bladder may be the cause, but all the signs and symptoms may appear cardiovascular in origin.

4. Cholecystography is an important diagnostic aid in cases of heart disease.

5. Surgery may be helpful, therefore, in the treatment of certain cardiovascular conditions.

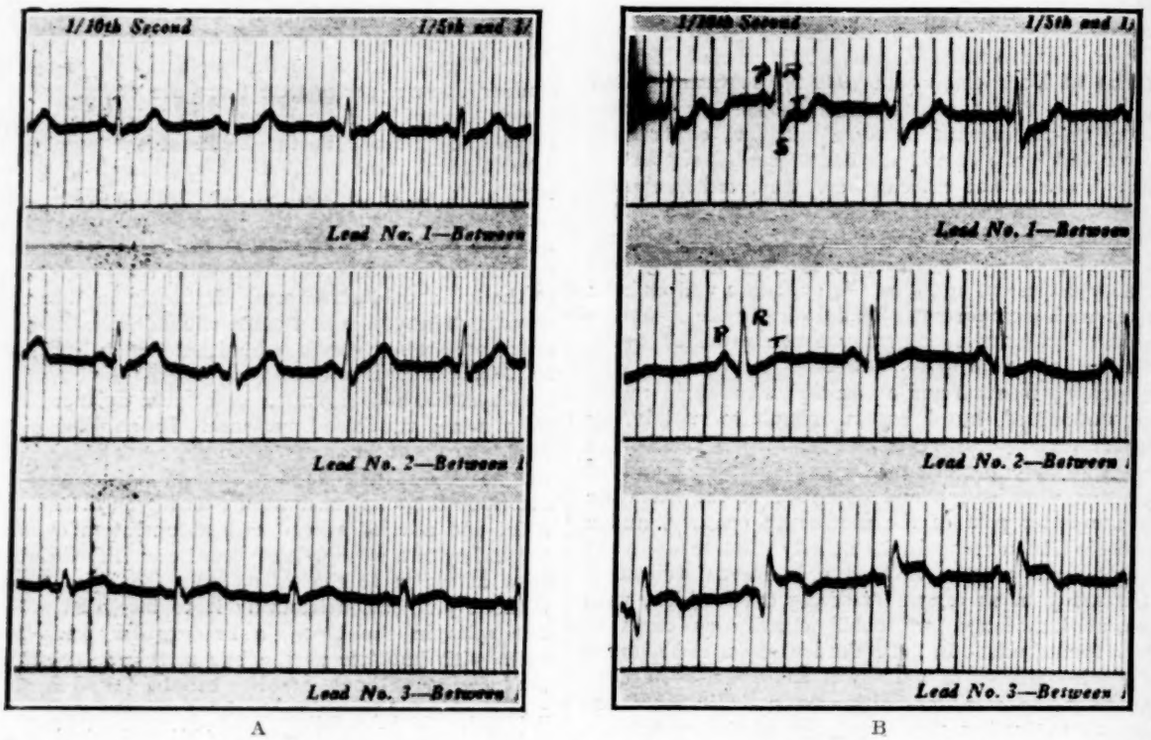
Miller,[15] in an article in the *Lancet*, entitled "The Gall-bladder and Cardiac Pain," described several cases where there was a definite association between coronary thrombosis and gall-bladder disease, and in his summary he emphasized the great importance of recognizing the similarity in symptoms between these two diseases, and the importance of dealing thoroughly with cases of cholecystitis and cholelithiasis as soon as a diagnosis is made. One famous case is that of John Hunter, who, as Mackenzie[16] points out, had attacks of angina pectoris in his later years. At post-mortem examination coronary sclerosis and gall-stones were found.

The Problem of Diagnosis

The difficulties in diagnosis are due to the fact that varying degrees of anginal pain can be simulated by gall-stone colic or by the pain of cholecystitis. Crichton Bramwell[17] states that we have to differentiate attacks of coronary thrombosis from ordinary angina, acute abdomens such as perforations, acute cholecystitis, acute pancreatitis, diabetic ketosis—often a transient glycosuria, though coronary thrombosis is found in diabetes—and from lobar pneumonia, where a wrong diagnosis is sometimes made. Pain in coronary thrombosis is a varying symptom; typically there is severe lancinating pain radiating to the left shoulder and inner aspect of the left arm, with a sensation of constriction in the chest and a fear of impending death. There may be precordial tenderness and soreness in the left arm.

John Hay[18] described cases where the pain was mild and transient, while Davis,[19] East,[20] and others have published reports of several cases where pain was completely absent. It is in the cases with pain that our difficulty occurs. In gall-bladder conditions the pain may be referred to the praecordium and left arm, while a right-sided distribution may be found in coronary thrombosis. One of my cases of coronary thrombosis, with sudden collapse, complained of severe pain in both wrists, and no actual pain in the chest till the following day. A previous history of abdominal symptoms, such as food intolerance, flatulence, and vomiting, is in favour of a gall-bladder lesion. The hospital type of patient is more subject to gall-bladder trouble and the upper social grades to coronary trouble. Women are more prone to gall-bladder disease. The age of the patient helps, as one usually finds coronary thrombosis above the age of 50. But cases have been recorded as young as 24 (Fernando[21]). Rigidity of the right rectus, and more especially jaundice, are practically diagnostic of cholecystitis.

One of the first of such cases which I examined was a widow aged 65 who gave a history of having had attacks of pain, anginal in character, and radiating to her left shoulder and down the inner aspect of her left arm. She had been treated for years as a case of angina, and only the lucky occurrence of jaundice, and of definite tenderness over the gall-bladder, made me think that her anginal pain might have been due to attacks of cholecystitis and not primarily to a coronary sclerosis. An operation was advised, and the removal of a thickened gall-bladder full of gall-stones confirmed the diagnosis. The patient made an uneventful recovery, and has had no further attacks of anginal pain. Since then the frequent association of gall-bladder lesions with cardiovascular defects, such as myocardial degeneration, hypertension, coronary sclerosis, and coronary thrombosis, has been noted. The following cases illustrate this relationship.



A B

FIG. 1 (Case 3).—A, Cardiogram taken seven and a half months before coronary thrombosis. Normal except for slight widening of QRS Complex, lead 3. B, Taken on day of coronary thrombosis. T 3 type, Q 3 +, T above isoelectric line.

Case 1.—Nurse O. B., aged 50, with a previous history of hysterectomy, and of rheumatism for one year prior to the present attack. She had a sudden attack of severe pain in the chest, radiating to the left shoulder and arm. The pain was sharp and stabbing, and lasted for four hours; there have been several less severe attacks since. She was diagnosed as a case of coronary thrombosis, and sent for electrocardiographic examination. There were no definite abnormal physical signs in her heart, and her vessels were normal, with a

pressure of 160/90. Apart from a left ventricular preponderance her electrocardiogram was normal. There was definite tenderness over her gall-bladder, and *x*-ray examination showed several large gall-stones. Cholecystectomy was undertaken, and she has had no further attacks of pain.

Case 2.—R. C., a male aged 56, was first seen in 1929 complaining of pain in his chest, most marked over the lower part of the sternum, and radiating across his chest. He felt a "lump in his throat," and both pain and dyspnoea were worse on exertion. There was slight pain down the left arm, with numbness and tingling in the hands and feet. His general condition was good, but his heart was enlarged. (*X*-ray examination showed a general enlargement with a dilated aorta.) His second aortic sound was accentuated, and his blood pressure was 180/110. He also showed evidence of gall-bladder trouble, and gall-stones were suspected. He kept fairly well for fifteen months, when he had a sudden severe attack of pain, which was typical of a coronary thrombosis. He was admitted to a nursing home, and was then collapsed and cyanosed, with a systolic blood pressure of 100, and he had a pericardial murmur with weak heart sounds. The electrocardiogram confirmed the diagnosis of coronary thrombosis. He gradually improved, and his blood pressure rose to 140. Four months after this attack he began to have recurring attacks of pain in his upper abdomen, with some radiation to his chest. These pains became more severe and more frequent, and he was readmitted to the nursing home in August, 1932, with jaundice. His electrocardiogram had improved, and as he insisted that something should be done he was operated on by Mr. McConnell, and a small, inflamed gall-bladder, which was adherent to both liver and bowel, was removed. He made an excellent recovery, and was able to return to work for two and a half years, free from pain. He died suddenly whilst attending the local market.

Case 3.—W. McL., a male aged 50, six weeks before examination, when horse-riding, was seized with a pain of moderate severity at the right side of his sternum. The pain was not acute, and was described as a "raw feeling," which was relieved at once by rest. Similar attacks came later when walking, and were always worse after meals. He had been a heavy smoker until recently. Nothing abnormal was found in the cardiovascular system, and his blood pressure was 145/85. A cholecystogram showed evidence of cholecystitis, but no gall-stones. His electrocardiogram was normal. Further examinations in London and in Australia confirmed the diagnosis of gall-bladder disease, but operative treatment was refused. Six months later he was seized with a sudden severe pain in the right side of his abdomen, radiating to the left arm. His blood pressure had fallen to 108/70, and he looked grey and collapsed. An electrocardiogram then showed a typical T 3 type of curve with a prominent Q wave and a very high take-off for the T wave. He improved for a few weeks, and then died suddenly. In this case one has to consider whether the removal of his gall-bladder, when he was first seen, would not have prevented his fatal coronary attack.

Case 4.—M. B., a hard-working professional man aged 55, had a long history of abdominal trouble, which was diagnosed as duodenal ulcer. He was seized with severe pain in his upper abdomen in April, 1934, and twelve days later he had another similar attack, and had to give up his work. On examination his general condition was good, but his blood pressure was low—116/65. The physical signs, both in chest and in abdomen, were indefinite, but an electrocardiogram showed a typical T and Q 3 type of curve. In spite of long rest in bed he still complained of discomfort, rather than actual pain, in his chest, and in view of his history of haematemesis a barium meal and an *x*-ray examination was advised. This showed the presence of several large gall-stones, which finding was confirmed by a cholecystogram. Both Professor W. W. D. Thomson and I considered carefully the question of operation, and our views were confirmed by Dr. John Parkinson, who agreed that removal of the gall-bladder was advisable. The operation has not as yet been performed.

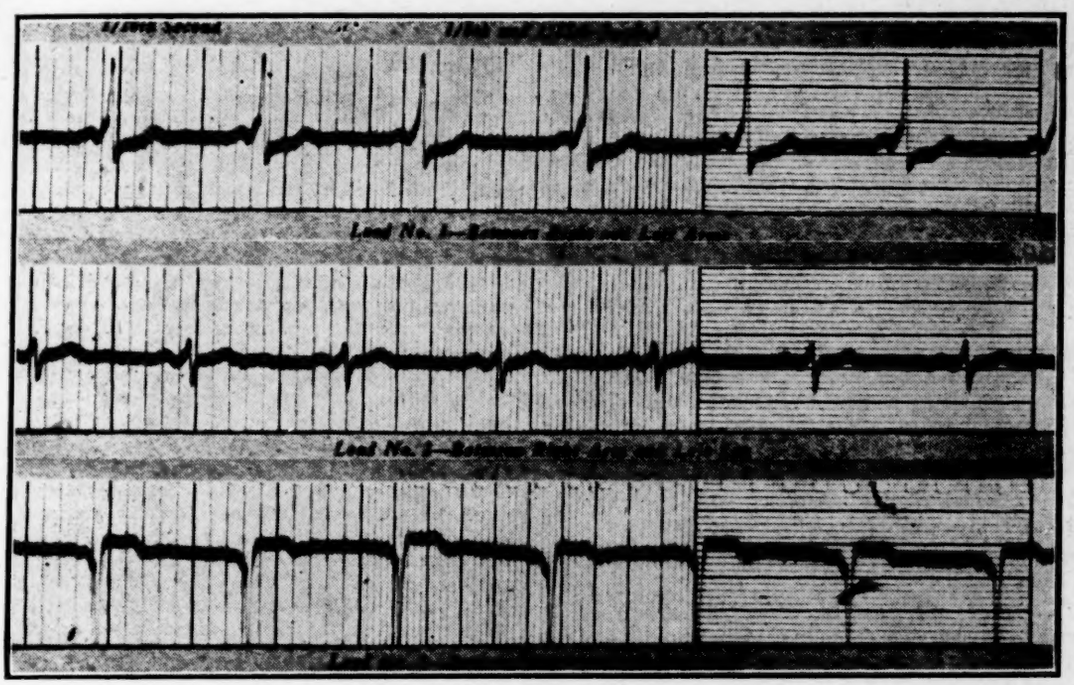


FIG. 2 (Case 4).—T 3 type, Q 3 +, three months after coronary thrombosis.

Case 5.—A. P., a male aged 75, was first seen in 1926, with a history of attacks of biliary colic. There was definite tenderness over the gall-bladder, and his blood pressure was 155/95. He remained fairly well until December, 1930, when he was seized with severe pain in the chest and became very cyanosed. Examination revealed crepitations at both bases, and his blood pressure was 140/85. An electrocardiogram in February, 1931, showed typical post-coronary thrombosis curves.

Case 6.—J. W. B., a male aged 57, gave a history of having had severe abdominal pains and cramps, with a rise of temperature, some four years previously. Five weeks ago he had had severe pain in the chest, across the sternum, which lasted a few hours. He was very restless, and on exertion pain radiated to the left shoulder and arm. His blood pressure was 145/100. *X*-ray examination showed aortic sclerosis and a boot-shaped heart. His blood sugar was 0.244, and an electrocardiogram showed the Q wave prominent in leads 2 and 3, and the T wave had a high take-off and was round and inverted in leads 2 and 3.

Case 7.—J. S., a male aged 53, had a cholelithotomy and cholecystostomy in September, 1929. He remained well and at his business until 1932, and then he had sudden severe retrosternal pain, radiating to his arm. He was very restless and sweating, and finally collapsed. His blood pressure was 130/85, having been previously 170. The electrocardiogram taken before his death was typical.

Case 8.—O. S., a male aged 53, had had attacks of gall-stones for some years. His blood pressure was 190/120, and his heart had a triple rhythm. One month later his blood pressure was 145/100, and an electrocardiogram two months later showed the T 1 type of coronary thrombosis. He died some months later.

Case 9.—T. H. W., a male aged 61, was first seen in 1930. He had pain in the chest, flatulence, dyspnoea, tenderness over the gall-bladder, and his heart was enlarged, boot-shaped, with an accentuated aortic second sound. His blood pressure was 192/120, and an electrocardiogram showed a left ventricular preponderance. He had a more severe attack of pain in his chest in March, 1932, and the electrocardiogram then showed a coronary thrombosis. He died suddenly a few months later.

Case 10.—S. S. R., a male aged 55, had a history of indigestion and heartburn, with flatulence, for years. One week ago he had sudden pain in the chest which was severe, and radiated to the throat, the left shoulder and arm, and sometimes to the right arm. There was dyspnoea on exertion, and tingling and soreness in the left arm and in the tips of his fingers, with some tightness in the chest. His attack started at 5 a.m., when his blood pressure was 155/105. An *x*-ray examination showed the aortic shadow increased, and a cholecystogram revealed cholecystitis. An electrocardiogram showed the T wave rounded and inverted in leads 2 and 3. He made a good recovery, but is not anxious to have an operation.

Coronary Thrombosis and Influenza

Though the majority of my cases of coronary thrombosis in which a previous infective focus has been found come into the gall-bladder group, there are others which have followed an acute attack of influenza. In three of the four cases I propose to describe there was no reason to suspect any previous cardiovascular lesion. The occurrence of temporary or sometimes permanent myocardial changes as sequelae of influenza is well known, and many of our hypertensive hospital patients have been active and fit for work until they became victims of this common infection.

Case 11.—J. C., a male aged 34, was a labourer, an active, athletic man, who cycled sixty miles each week-end. He had an attack of influenza two days prior to the sudden onset of severe pain in his chest, typical of coronary thrombosis. His electrocardiogram showed a 2:1 heart-block, as well as the typical curves of coronary thrombosis. A slight temperature for a few days was associated with pericarditis. His pulse rate gradually increased from 34 to 72 in one month. He reported ten months after his discharge from hospital, free from symptoms and back at work.

Case 12.—Mrs. B., aged 42, had had influenza for some days when she was seized with severe pain in her chest, radiating to the left shoulder. Dyspnoea was marked, and she was very restless. Her blood pressure was 125/60, and her electrocardiogram was of the T 3 type. She made a good recovery.

Case 13.—The Rev. R. B., aged 45, was ill for some days with influenza, but did not take proper care. Four days before admission to a county infirmary he was seized with pain in his abdomen and vomiting, with a sense of fullness and constriction in his chest and marked dyspnoea. His blood pressure was 90/70, and there were crepitations at the right base. His electrocardiogram showed a T 1 type of coronary thrombosis, and he ran a temperature for some four days, and ultimately died on the tenth day.

Case 14.—Dr. S., aged 61, was convalescing at Portstewart following an attack of influenza six weeks previously. He went to visit some friends and collapsed, with severe pain and constriction in the chest, marked dyspnoea, and pulmonary oedema, evidenced by a continuous discharge of frothy, blood-stained fluid from his lungs. His pulse rate was 180 and very thready, with a blood pressure of 95/80. Seen eight weeks later, he was greatly improved, with a blood pressure of 175/115. His heart was boot-shaped on *x*-ray examination, and the electrocardiogram showed typical T 1 changes, with the Q wave prominent in lead 3. He died some months later.

Cases Associated with Phlebitis and Other Forms of Thrombosis

Parkinson and Bedford[3] in their series of 100 cases, state: "In three of our cases phlebitis with thrombosis of leg veins complicated the attack of coronary thrombosis. Occasionally the onset of coronary thrombosis appeared to be related to infections, such as a carbuncle, or sepsis elsewhere." When one considers cases of phlebitis one generally thinks of infection, and the occurrence of thrombosis in the leg veins, of pulmonary infarcts, and other forms of thrombosis would fit in with an infection, either acute or chronic, rather than a thrombophlebitis migrans, into which category, it has been suggested, these cases should be put.

The following cases illustrate this association of coronary thrombosis with phlebitis and other forms of thrombosis.

Case 15.—J. A. F., aged 61, a teacher by profession, consulted me in May, 1933, complaining of dyspnoea and retrosternal pain on exertion. Occasionally the pain occurred if he was excited or worried. Discomfort was always more marked after meals, though there were no definite symptoms of an abdominal lesion. He had several septic teeth, and a previous history of recurrent bronchitis. Cardiovascular examination proved negative, and his blood pressure was 138/95 and his electrocardiogram normal. He was advised to have his teeth extracted and to have his gall-bladder *x*-rayed. His teeth were extracted, but instead of allowing further investigation of possible septic foci he crossed to England and consulted a physician, who sent him away satisfied with the diagnosis of coronary sclerosis. He remained fairly well till September, 1934, when his attacks of pain became much more severe, lasted longer, and occurred at rest, even waking him at night. He also complained now of pain in his jaws, numbness and tingling in the fingers of his right hand, flatulence and distension of the abdomen, and visual disturbances. His blood pressure had fallen to 118/70, and his electrocardiogram showed the Q 3 and T 3 type of coronary curve. Two weeks later he had an attack of pain in his right chest with cough, and developed a pulmonary infarct, first on the right side and then on the left. Later this was further complicated by a left femoral phlebitis. His urine was found to contain enterococci, and Sir Thomas Houston, on testing his blood, found a well-marked agglutination to the enterococcus. He agreed with me that this infection was the most likely cause of his various types of thrombosis, and a course of enterococcal vaccine has prevented any further trouble. Recently I heard that he had so far exceeded medical orders as to catch a fifteen-pound salmon.

Case 16.—W. B., a male aged 56, had a history of flatulence and abdominal distension for some time. He was seen in December, 1933, and complained of having wakened at 4 o'clock that morning with severe pain in the chest, and on getting up he collapsed. When seen by his doctor his systolic blood pressure was 80, but rose gradually to 130. Pain persisted, even after morphine, and radiated to his shoulders and the outer aspects of his arms. He was very pale, but there were no physical signs in his chest. An electrocardiogram showed a high take-off of the T wave in leads 2 and 3, with rounding and inversion. He was improving steadily until he developed a phlebitis, first of the left leg, and then, two weeks later, of the right. Seen again in April, 1934, six weeks after the last phlebitis, his general condition was good, with a blood pressure of 160. In December, 1934, after he had resumed work, he had no cardiac symptoms, but had fainted after an attack of diarrhoea. An electrocardiogram showed right ventricular

extrasystoles and an inversion of the T wave in leads 2 and 3. His blood pressure was then 175/115. He made a good recovery.

Case 17.—H. I., a male aged 56, had a history of having a septic antrum eight years previously. Tonsillectomy was performed and the antrum washed out. He was fairly well until six months before onset of coronary thrombosis, when he began to be troubled with oedema of the left side of the face and an irritative dermatitis of the face and palms. This was relieved by washing out the antra and by injections of adrenaline and calcium, and he was fairly well until he was seized, in the corridor of the hospital, with a severe, agonizing pain in his chest. When seen by me half an hour later he was ashy grey and collapsed, with a very thready pulse. The pain was so severe that frequent injections of morphine were required daily for several days. During the course of his fourteen weeks in hospital he had several pulmonary infarctions, both lungs being affected, and finally he developed a left femoral phlebitis. He was given four injections of 0.3 gram of novarsenobillon and injections of enterococcal vaccine, which seemed to prevent the formation of further thrombi. He is at present convalescent and able to take walks.

Case 18.—J. B., a male aged 57, was a case of coronary thrombosis who, after three weeks' rest in bed, suddenly developed an embolic block of his common iliac artery and died within twenty-four hours.

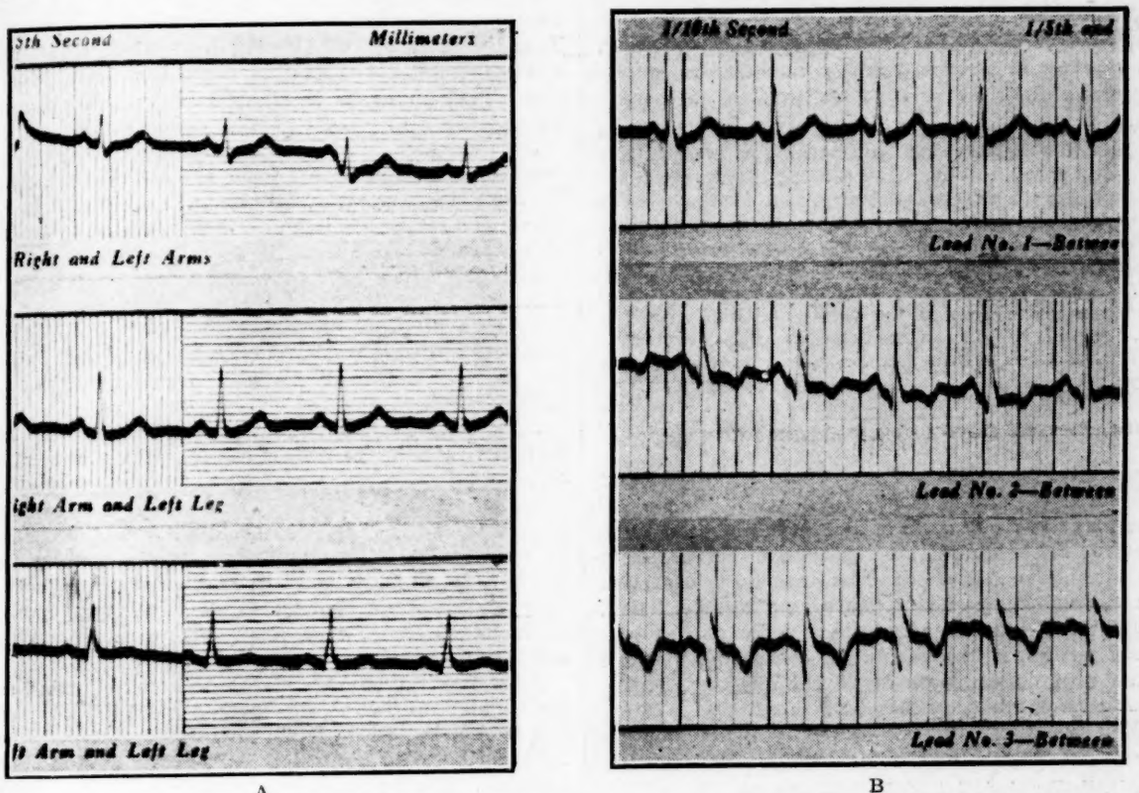
Case 19.—Mrs. T., aged 66, had previously enjoyed good health. Ten days before being examined she had a dizzy attack, and then gradually developed loss of power in the left side, due to a cerebral thrombosis. Her blood pressure was 118/70, and an electrocardiogram showed typical Q 1 and T 1 curves. She died later.

Other Pyogenic Infections

Some cases of coronary thrombosis may give a history of a previous infection, such as pneumonia, carbuncle, cystitis, or pyelitis.

One interesting case is that of a lady aged 73, who was first seen in April, 1935, with a history of having had a slight attack of pain in her chest a few months before. One night she was awakened by a severe pain, retrosternal and radiating to her left arm, and leaving a dull ache. Her blood pressure was 125/90, but her electrocardiogram showed no definite change other than left ventricular preponderance. She was admitted to a nursing home, and whilst there showed evidence of a gall-bladder lesion. But the main focus of infection was her septic teeth. She remained free from pain until August, 1935, when she had another attack of retrosternal pain, with radiation to the left arm and a persistence of tingling in her fingers for some days. Her blood pressure had risen to 165/95, but her electrocardiogram showed a low take-off of the T wave in lead 1, and a flat T wave in lead 2.

This case shows a slow progressive coronary change, and it will be interesting to see whether the patient will show an improvement in her symptoms and signs now that she has had her bad teeth extracted.



A B

FIG. 3 (Case 15).—A, One year and four months before coronary thrombosis normal complexes. B, six months after coronary thrombosis. T 3 type, Q 3 +, T 2 and 3 inverted.

Coronary Thrombosis and Syphilis

The rarity in which cases of cardiovascular syphilis are complicated by the onset of coronary thrombosis has been emphasized by many writers. Carey Coombs[22] explained this by the fact that "arteriosclerosis usually roughens the wall and encroaches on the lumen of the coronary vessels throughout their course, while syphilis scarcely ever attacks these vessels except at their orifices." Bruenn,[23] in his analysis of 118 cases of cardiovascular syphilis, found the right coronary orifice more frequently involved than the left in the ratio of 8 to 1, but that infarction was relatively rare in cases with syphilitic stenosis or occlusion of the coronary orifices. He also found that extreme stenosis of the coronary openings due to syphilis predisposes to sudden death. Parkinson and Bedford,[3] in their series of 100 cases of coronary thrombosis, found three due to syphilis, while five others showed syphilitic occlusion without thrombosis. It is not possible to give any definite estimate of the incidence in my cases, as the Wassermann test was not done as

a routine. Two cases, however, are worthy of mention. One, a male aged 61, who had an attack of coronary thrombosis in London, and was examined by Dr. Parkinson, has done well on iodides and mercury. The other, a young man of 32 who had contracted syphilis six years previously, has also done well on the same treatment.

Coronary Thrombosis and Diabetes

Though the frequency with which coronary thrombosis and diabetes are associated is attributed to degenerative vascular changes, one has to remember that in diabetes acute and chronic infections are a frequent source of worry and danger. Morris Enklewitz[24] found that coronary thrombosis occurred twice as frequently in diabetics as in non-diabetic patients, and other writers have had similar findings. While two of my cases with blood sugars of 0.244 and 0.345 at the time of the attack of coronary thrombosis would fit in with the degenerative vascular changes being the prime cause of the occlusion, a third case would seem to point to an infective agency being superadded to the vascular degeneration.

This was a married woman of 43 with a history of previous good health till three years ago, when she had a large carbuncle on her back. Since then she had had polyuria and thirst, but did not consult her doctor until a few days before her admission to hospital. Her urine was loaded with sugar and acetone, but with insulin and diet both urine and blood became normal, and she was due to be discharged from hospital. The evening before she was to go home she was seized with a severe pain in the chest, and died in a few minutes. A post-mortem examination showed that her death was due to a coronary thrombosis. Clinically this patient showed no evidence of any vascular degenerative changes.

Summary

The cases I have mentioned are only a few picked out to demonstrate the fact that concurrent or previous infections are found in many cases of coronary thrombosis, and more cases could be quoted bearing out the same intimate relationship. It is difficult to prove that these infections are the determining cause of the severe cardiac lesion, but the fact that lesions such as those of the gall-bladder are found makes it essential that everything possible should be done to eliminate any focal infection, in the hope that a cardiac tragedy may be averted.

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RESULTS OF RADIUM TREATMENT OF CARCINOMA OF THE CERVIX UTERI*

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Although radium has been used in this country for many years for the treatment of carcinoma of the cervix it is a curious fact that until quite recently no statistical reports for a five-year period have been published, and even now the figures from individual institutions are very small, with the exception of those from the Marie Curie Hospital. True the staffs of the different institutions where radium treatment was being carried out stated that they were obtaining good results, but they did not publish any figures comparable with those emanating from foreign clinics.

On the other hand, the gynaecologist who performed the Wertheim operation knew quite well what percentage of cures he was able to obtain, and could therefore assess accurately the value of that method of treatment. Unfortunately the Wertheim operation is associated with a high immediate mortality and a long and trying convalescence, and for these reasons most operators would have been prepared to abandon the method if convincing evidence had been produced by our radiological colleagues that radium treatment was able to obtain results at least equally good.

Such evidence, however, was not forthcoming, and it was this inability to obtain definite figures from the use of radium in this country which determined us in 1928 to purchase our own supply and to treat our own cases, both in private and in hospital. As this step was in the nature of an experiment we decided to employ one particular method, to carefully record and follow up every case, and to publish our results as soon as a sufficient number of cases treated more than five years previously had been collected.

After much thought and comparison of foreign results we decided to follow the method used by Heyman in Stockholm, but with certain modifications suggested to us by Dr. Helen Chambers and Dr. S. Russ of the Middlesex Hospital. On their recommendation we obtained 100 milligrams of radium element, made up in such a form that 40 milligrams could be inserted into the uterine cavity and 60 milligrams be applied to the vaginal aspect of the cervix and vaginal fornices. The 40 milligrams were packed into two large platinum needles, with walls 1 millimetre in thickness and containing 24 and 16 milligrams respectively; the 60 milligrams into fifteen small platinum needles, with walls 0.5 millimetre in thickness and each containing 4 milligrams of radium. To obtain the additional screenage necessary the small needles were enclosed in three box applicators made of silver, and with walls 1.6 millimetres in thickness.

We decided to apply the radium to the surface of the cervix rather than to insert the needles into the growth, since we found that there was a considerable mortality in certain institutions where the latter method was used, probably due to the inoculation of organisms into the subjacent healthy tissue. Each case was treated on three occasions for twenty-four hours, there being an interval of one week between the first and second treatments and of

* A paper read at a meeting of the North of England Obstetrical and Gynaecological Society, February 28th, 1936.

three weeks between the second and third. The total dosage was therefore 7,200 milligram-hours—larger than that now used by Heyman ; but we decided to adhere to this dose until we had some facts before us.

We still performed the Wertheim operation upon selected cases, but less and less frequently as we became convinced of the good results obtained with radium ; we have both now practically abandoned this operation. In 1930, largely as a result of our experiment, the Board of Management of the St. Mary's Hospitals, Manchester, decided to purchase 220 milligrams of radium, sufficient for the treatment of two cases daily, so before long it will be possible to publish the results of a much larger series of cases treated by the staff of that hospital.

Results

We treated ninety-four cases before January 1st, 1931, and of these there were: alive and well five years later, thirty-nine (41.4 per cent.) ; dead or untraced, fifty-five (58.6 per cent.)

Included in the survivals is one patient who was well at the end of five years, but died from recurrence eighteen months later. Another patient had a recurrence four years and ten months after treatment, but was alive at the end of the five-year period ; she has been included in the fatalities. Four patients cannot be traced, and they also have been included among the deaths.

Immediate Mortality.—One patient died from peritonitis after the second treatment, and another from pulmonary embolism, so the immediate mortality is 2.1 per cent.—a very low figure compared with the mortality following the Wertheim operation.

Microscopical Confirmation.—At first this was not undertaken in the advanced cases, since the diagnosis in these circumstances is so definite to an experienced clinician that such confirmation appeared unnecessary. Later, when we realized that readers of our results would not have seen the cases and that acceptance of the diagnosis must rest upon our unconfirmed statement, we excised a piece of the growth for laboratory confirmation as a routine measure. Microscopical examination was therefore only performed in about half of our cases, but those not so examined were so advanced that no error in diagnosis was possible.

Stage of Growth

No matter how carefully the various stages of carcinoma of the cervix are described the stage into which a particular case falls will always depend on the personal opinion of the operator ; for this reason it is impossible to compare the results obtained by different operators in any one group. This makes comparison between the results of Wertheim's hysterectomy and radium extremely difficult, since the radiologist tends to classify a larger number in the inoperable groups than does the surgeon.

As an illustration of this difficulty in classification, Gray Ward records in his last publication how three experienced visiting clinicians examined one case at the Radium-hemmet and each classified it as a different stage. We have adopted the classification of the Radiological Sub-committee of the League of Nations Cancer Committee and grouped our cases as follows:

First stage: 11 cases—7 alive and 4 dead.
Second stage: 27 cases—12 alive and 15 dead.
Third stage: 40 cases—17 alive and 23 dead.
Fourth stage: 10 cases—1 alive and 9 dead.
Six cases were unclassified.

There were two cases of cervical stump carcinoma following subtotal hysterectomy, and both patients died from recurrence ; it is a little unfair to include them, although we have done so, because it is impossible to insert the full dose of radium into the uterine cavity. It will be noted that one patient with a fourth-stage carcinoma is alive and well after five years. Another patient in the same group was quite free from symptoms for four years, but developed a recurrence during the fifth year. These results provide a strong argument for the use of radium in apparently hopeless cases.

Progress following Treatment

In the great majority of cases the malignant ulcer is healed when the patient reports three months after treatment, but we have had a few cases—not more than six—in which there was no apparent retardation of the growth. As might be expected, recurrences are most frequently found in the region of the iliac glands. The effect of radium diminishes so rapidly with the increased distance from the object that any malignant cells already deposited in the iliac glands are liable to escape, even when those in the cervix and immediate neighbourhood are completely destroyed. Indeed, it is difficult to see how radium applied to the cervix can destroy malignant cells so far distant as the iliac glands.

This would seem to be an argument in favour of the combined use of radium and surgery—in other words, a block dissection of the regional glands following radium treatment as is done in the case of malignant growths of the tongue. In this connexion it may be mentioned that some years ago one of us (W. F. S.) performed the Wertheim operation in sixty-three cases after preliminary treatment of the cervix with radium ; after five years there were alive and well only twenty-two (34.9 per cent.), a result not so good as when the operation alone was performed. These cases were treated before we owned our own radium, so the actual dose given is not known.

During the contraction of the scar tissue following the use of radium a few patients complain of severe pain in one side of the pelvis and radiating down the leg. This is very suggestive of recurrence in the iliac glands, and the fact that these are difficult to palpate until they have assumed a considerable size makes it impossible to determine in some cases whether there is recurrence or not.

One patient who was treated with radium in July, 1929, had this severe pain towards the end of 1930 and during the early part of 1931. So severe was the pain that the abdomen was opened with the intention of removing the iliac glands or treating them with radium. No enlarged glands could be found, however ; the uterus, which was quite mobile, was removed by a simple panhysterectomy, and the iliac gland area was dissected out. No sign of malignancy was found by microscopical examination in either uterus or glands ; the patient has been free from pain since and has not shown any sign of recurrence of the growth.

Radium or Wertheim Hysterectomy

At present these are the only methods of treatment which hold out any reasonable prospect of cure. When better methods of treatment or prevention are discovered we shall no doubt remember our present comparative impotence with the same horror that some of us remember our complete impotence before the days of the Wertheim operation, but until that time arrives our choice must of necessity be limited to the two methods under discussion. Each gynaecologist must decide for himself which confers the greater benefit upon his patients.

It is very difficult to arrive at a decision from figures published by different operators and radiologists, because so much depends on the stage of the growth, the competence of the operator or radiologist, the method of applying the radium, and, above all, the percentage of cases treated. The only large series of figures of the

Wertheim operation are those of Victor Bonney, and are as follows:

Died from operation	55 or 14 per cent.
Lost sight of	12
Died from other diseases	12
Recurrence within five years ...	155
Alive and well after five years ...	150 or 39 per cent.
Total	384

Bonney claims an operability rate of 63 per cent., so his results show a five-years freedom from recurrence of 24.6 per cent. of all cases seen by him. After ten years he has 20 per cent. alive or, if those untraced or dying from other diseases are excluded, 33 per cent. In this country the only figures for radium treatment which can be compared with Bonney's are those of the Marie Curie Hospital, London. Last year's report shows a total of 392 cases treated more than five years ago, and of these 142, or 36.2 per cent., are alive and well.

In 1934 Beckwith Whitehouse published the five-year results collected from St. Bartholomew's, University College, the Middlesex, and the Marie Curie Hospitals in London, the General Hospital, Birmingham, and the Royal Infirmary, Cardiff. The total number was 507, of which fifty-six patients were alive and well at the end of five years (11 per cent.).

It is easier to decide which is the better method if one operator is able to publish statistics for both operation and radium, since errors dependent upon the personal factor are common to both. One of us (W. F. S.) published his results of the Wertheim operation some years ago, and the cases are still being followed up; at the present time the results are as follows:

Died from operation ...	33 or 21.4 per cent.
Lost sight of	9
Died from other diseases	5
Recurrence within five years ...	48
Alive and well after five years ...	59 or 38.3 per cent.
Total	154

Of those operated upon more than ten years ago there are 120 cases, thirty-three (27.5 per cent.) of which, without making any allowance for those who have died from other causes or are untraced, are alive to-day.

Comparison of Results

These results are so close to those of Victor Bonney—after five years 38.3 per cent. alive as compared with his 39 per cent., and after ten years 27.5 per cent. as compared with his 20 per cent.—that we may take them as representative of what can be done with Wertheim's hysterectomy. The only factor which is not comparable is the percentage of cases treated. Working in two large Manchester hospitals, the Royal Infirmary and St. Mary's Hospitals, it was impossible to arrive at an accurate figure without a very laborious search through out-patients' records, but our impression is that our operability rate was less than Victor Bonney's 63 per cent.

The results of our treatment with radium show that 41.4 per cent. were alive and well after five years. Not only is this percentage greater than that obtained with the Wertheim operation, but cases are included of such an advanced character that no operation could have been performed.

Our figures are small. Whether this high percentage of freedom from recurrence will be maintained when we have larger figures remains to be seen, but we are convinced that we are getting better results with radium than we did with Wertheim's hysterectomy, and therefore we can conscientiously save our patients the pain and discomfort of a trying convalescence. This does not mean that we are satisfied; no one can be with figures which show less than half the patients alive after five years.

In one of our hospitals all patients are now being given deep *x*-ray therapy after radium treatment, but this has been in progress for too short a time to permit any comparison. Abroad this combination seems to have given better results. It is also possible that a block dissection of the iliac glands might still further improve matters, though so far we have not been convinced of its efficacy.

While waiting for more efficient methods of prevention or treatment to be evolved we ought to employ the best method at our disposal. The figures which we have been able to put forward strongly support the view that the method is the application of radium, and not the severe surgical procedure still favoured by many gynaecologists in this country.

ACUTE OTITIS MEDIA

ITS TREATMENT, WITH RESULTS

BY

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During the course of a common cold, an influenza, or other febrile disease a patient develops an acute inflammation of the middle ear. So long as the otitis remains catarrhal—that is to say, an inflammation without the formation of pus within the middle ear—the treatment is more or less the same: drops to relieve the pain, rest in bed, calomel, heat applied to the ear as radiant heat or in the form of fomentations. Drops to relieve pain may be misleading, as with the cessation of pain we may consider the patient is improving, whereas the contrary is often the case. However, there is no doubt that a considerable proportion of patients respond to the treatment and recover without any further complication.

On the other hand, in a large proportion catarrhal otitis becomes suppurative. There is increasing pain, deafness, tinnitus, vertigo, a rise of temperature—particularly in children—and perhaps even tenderness over the mastoid process. It is now time to consider the advisability of a paracentesis. The drum is usually red and bulging. The bulging alone is a sufficient indication for a paracentesis in the absence of any of the symptoms which have already been mentioned, but usually it is associated with one or more signs or symptoms, such as pain, deafness, and frequently tenderness over the mastoid.

Technique of Paracentesis

Paracentesis is invariably done in a nursing home under a general anaesthetic such as ethyl chloride. After the skin of the ear and auditory canal is cleaned and painted with iodine the anaesthetic is commenced and an incision is made from below upwards in the posterior half of the drum, care being taken to avoid touching the inner wall of the tympanic cavity with the point of the knife. Pus or serum, sometimes accompanied by gas, escapes. A wick of gauze is introduced as far as the drum, and should be left in till the following morning, when it may be removed.

The discharge may be copious at once, or it may take thirty-six to forty-eight hours before it is free. The discharges are mopped up with sterile wool for forty-eight hours, and then, if copious, the ear is irrigated four-hourly, six-hourly, or thrice daily, according to the quantity of the discharge. The more copious it is the more frequently is the ear irrigated and dried. Irrigation,

which may be carried out with a Higginson syringe fitted with a glass nozzle, should be gentle. It is comforting to the patient, and is tolerated by even the most nervous children. Force should not be used in irrigating.

The essential points in after-treatment are therefore frequent syringing followed by thorough drying of the auditory canal, so that neither debris nor pus may impede the free drainage from the middle ear. Radiant heat is applied to the ear thrice daily for about twenty minutes at a time. The mastoid area may be fomented if there is pain or tenderness in this region. Such symptoms persisting for a day or two after paracentesis do not mean that there is a mastoiditis which will necessitate operation. In the great majority of cases the patient recovers without further surgical treatment. Rest in bed for at least a week is essential after a paracentesis, by which time the temperature in children has usually become normal. Adults have little or no fever with an uncomplicated acute otitis media.

Complications and After-care

The most serious complication in the early stages of an acute otitis is meningitis, but fortunately this is rare. It is important to watch the temperature and to look for early signs of meningitis if it remains elevated. No rule can be set down in this matter, as cases vary so much in different seasons and years.

In the uncomplicated case the discharge becomes gradually less in about a week or ten days, and usually ceases in about sixteen days. After the discharge ceases, which coincides with the closure of the perforation or incision in the drum, the hearing is still impaired.

Politzerization daily or thrice weekly will restore the hearing to normal in a fortnight, or in all about thirty days from the commencement of the otitis. This is the course in the average cases. The patient remains in the nursing home for about ten days, and then is treated daily in the consulting room till the discharge ceases, and thereafter twice or thrice weekly till the hearing is restored to normal. In short, the treatment may be summarized as follows: paracentesis, syringe, dry, politzerize, dry, powder.

Value of Syringing

A considerable amount of confusion exists in South Africa regarding the after-treatment of paracentesis. The treatment which has been described is one I have used for the last fourteen years without variation. A form of treatment frequently described as the "dry treatment"—that is to say, never irrigating, but relying on mopping the canal followed by the instillation of drops—has not been used in this series. If an ear is not syringed it soon collects debris and pus sufficient to interfere with free drainage.

It is idle to say syringing may cause secondary infection of the middle-ear cavity. Assuming the paracentesis and the after-treatment is done aseptically, then we can at worst only drive the same bacteria into the middle ear as came out of it. But we must not overlook the fact that the mucous membrane of the middle ear is acutely inflamed, and little or no cavity exists because of the oedema; the possibility of driving bacteria back into this almost non-existent cavity is therefore extremely remote.

The use of drops, such as alcohol, magnesium sulphate, glycerin, hydrogen peroxide, picric acid, etc., seems to me to be useless. They cannot penetrate the middle-ear cavity, as the oedematous mucous membrane will not permit this. Moreover, if strong antiseptics such as alcohol, picric acid, etc., did penetrate the middle-ear cleft they would paralyse the ciliated mucous membrane for some hours, and the useful purpose it serves of propelling the discharge onward would be suspended, at least temporarily.

Drops are useful in certain stages; if a conical perforation develops it is often benefited by ac. boric and alcohol drops, but then there is no danger of the drops reaching the tympanic cavity. It is often said that syringing drives the bacteria into the mastoid process, but the mastoid cells are in an active state of inflammation in every case of acute otitis media. This is well demonstrated in the early stages by *x* rays, in which the cells show up as cloudy compared with the normal mastoid. Traumatic perforations, however, should not be syringed unless they reach the stage of profuse discharge; then they may be treated as a paracentesis case.

The Dry Method

The method of mopping up the discharge has been described as the dry method, but I believe the method which I have described is the true dry method. The only wet part of the treatment is the irrigation; then the canal is dried thoroughly. After the patient leaves the nursing home the ear is syringed daily, dried, politzerized so as to drive away any secretions out of the tympanic cavity, dried again, and finally powdered with boric acid.

A study of the literature on the subject of the treatment of acute otitis has not presented anything very definite; some syringe, and others do not; no hard-and-fast rules have been laid down by either side.

First Series of Cases

Cases which were paracentesized before spontaneous rupture of the drum took place numbered 339; of these, twenty-four cases, or 7.06 per cent., required a simple mastoid operation. One of the paracentesis patients died as a result of pneumococcal meningitis without macroscopic evidence of involvement of the mastoid cells; it seemed to be a fulminating type.

The healing of the perforation took on an average sixteen and a half days, and the return to normal hearing averaged thirty days from the date of paracentesis. The hearing result was noted in only 161 cases, as many small children could not be tested, and others with previous hearing defects could only be estimated. Of the 161 patients all were satisfied that no defect in hearing was left after healing was complete. Age and sex were noted in all cases, but they have no bearing on the subject, except to demonstrate that the majority were children.

Second Series of Cases

Cases which were paracentesized after the discharge had commenced, owing to pain, elevation of temperature, mastoid tenderness, etc., numbered 126. It is surprising how frequently on incising the drum in such cases pus escapes under pressure. Of this series twenty-two, or 17.4 per cent., required a simple mastoid operation. There were a few cases where the operation was performed two or three days after paracentesis, and I think these should be left out of this calculation, as they probably had a mastoiditis when the paracentesis was done. The more correct percentage, therefore, would be between 14 and 15. There was one death in this series, due to meningitis caused by a haemolytic streptococcus, without macroscopic involvement of the mastoid.

A comparison of the first and second series demonstrates that early paracentesis, before spontaneous rupture takes place, is the best form of treatment. Quite apart from an early paracentesis there are other factors which influence the disease, the chief of these being, I believe, the virulence of the infection and the resistance of the patient. In certain years the disease is mild, in others

it is exceptionally virulent, and liable to give rise to complications.

The most frequent causes of otitis media in these cases were the common cold and influenza, followed in order by tonsils and adenoids, scarlet fever, and measles. Nine cases followed operation on the nose, of which four required mastoid operations.

Cases Requiring Operation

One hundred and six patients were operated on by the Schwartze method, which is commonly known as the simple mastoid operation, with preservation of the drum and return of hearing in the vast majority of cases to normal. As a routine method the mastoid antrum, the lateral sinus wall, and the dura of the middle fossa were exposed, while the mastoid tip was explored and removed in most cases. Except in a few isolated instances the routine has been adhered to, so that the possibility of overlooked infected cells, a perisinusitis, or extradural abscess was minimized.

Twenty-two, or 20 per cent., of these patients had been paracentesized before spontaneous rupture; the balance of 80 per cent. were either not paracentesized at all or only after spontaneous rupture had occurred. These figures show the importance of early paracentesis; 93 per cent. of cases of acute otitis media are cured by paracentesis before rupture, with return of hearing to normal within a month.

After the Schwartze operation is completed an attempt is made to syringe saline through the aditus so that it comes out of the perforation and into the external auditory canal. Care must be taken not to force the liquid through in any manner. The cavity is then filled up with absolute alcohol, dried, iodoform gauze packing introduced, and the incision is partly closed. The external canal is plugged with narrow iodoform gauze, so that no narrowing of the canal is allowed to take place. The wound is left undisturbed for four days, when the packing is removed, which is always a painful process. Fresh gauze is reintroduced daily till the cavity heals by granulation. The perforation usually heals in a few days, and from then on the cavity is allowed to heal up rapidly. A plastic operation to bring the skin edges together is sometimes necessary. Eventually politzerization will restore hearing to normal. There should be no mortality in uncomplicated cases of acute mastoiditis.

Results of Operation

In the 106 patients operated on the ages varied from 6 months to 60 years; 48 per cent. were under the age of 12. The hearing result was noted in sixty-seven cases, of which fifty-eight were normal, four were noted as good, and five as moderate. It must be remembered in this connexion that patients with indifferent hearing before operation were satisfied that they heard as well after operation.

The perforation healed completely in 102 out of 106 cases. A permanent perforation remained in three cases, and there was no note in one. The dura of the middle fossa was exposed in all but two cases, both under the age of 1 year. The lateral sinus was exposed in all but one case; again under 1 year of age. A perisinal or extradural abscess was present in nine cases.

Temporary facial paralysis developed in three cases, lasting six to nine months before recovery. In all these cases the cells dipped medial to the facial canal.

There were five cases of Bezold's mastoiditis, but they did not require any further intervention beyond removal of the mastoid tip. Only one case of Gradenigo's symptom-complex was observed.

The time of healing varied from eleven to 150 days, the average being thirty-five days; plastic closure was necessary in twenty-six out of 106 cases, chiefly to prevent unsightly post-auricular depression.

The mastoid process was cellular in eighty-three cases, diploic in fourteen, sclerotic in one case (a diabetic), and there is no note in eight cases.

Blood-clot healing was the method employed in thirteen cases early in the series. The mastoid cavity, after being thoroughly cleaned by syringing and alcohol, was allowed to fill up with blood and the wound closed. Nine of these recovered without breaking down of the wound. The balance recovered after breaking down or reopening of the wound. I do not recommend this method. Within the last eighteen months fifteen cases have been drained through the post-auricular wound by means of one or more rubber tubes. The wound is closed above and below the tubes. After four days the tubes are removed painlessly and gauze packing substituted daily. By this method there is no pain during the dressings, and the results are as good as the packing method, and I believe a little quicker in healing.

Two of the 106 cases subsequently required a radical mastoid operation.

Mortality

There were two deaths in this final series of 106 cases. Both occurred in cases of long-standing mastoiditis, which should have been operated on very much earlier. Both had diploic mastoids; one died of pneumonia, and the other of cellulitis of the neck, followed by meningitis. This is not to say that I have not had other deaths following mastoid operation, but these have all been in cases where intracranial complications were present before operation, and such cases are not included in this series.

Conclusion

The main purpose of this article has been to give the results of one method of treatment of acute suppurative otitis media and its most frequent complication—acute mastoiditis. Early paracentesis is strongly indicated to prevent so far as possible the onset of mastoiditis and ensure a quick convalescence. Only 7 per cent. of patients who have had an early paracentesis require a mastoid operation. Except under exceptional circumstances an acute mastoiditis does not develop for seven to twelve days after the onset of an otitis.

No attempt has been made to tabulate indications for operation, as no hard-and-fast rules can be laid down. Some patients have mastoiditis without any discharge, others with; some with swelling, others without; while tenderness and a high temperature may exist or not.

Experience counts as much here as in any other field of surgical work, and even then a furuncle may be mistaken for a mastoiditis.

To commemorate the many and great contributions made to the surgery of the bones for more than forty years by Dr. Albin Lambotte, a jubilee book is to be compiled and presented to him. It will be recalled how much the world owes to his operative technique for the open method for the reduction and setting of fractures and his procedure of metallic prosthesis. The book will be limited to articles by authorities on the surgery of the bones and joints, and among the contributors will be Mr. H. A. T. Fairbank and Professor Hey Groves of this country, and Drs. Albee and Smith-Petersen of the United States. The articles will be published in French, Dutch, English, German, or Spanish. It will appear in one or two volumes, fully illustrated, and the cost will be 30 belgas. Applications for it should be addressed to Dr. Jean Verbrugge, 75, Avenue van Ryswyck, Antwerp.

CHRONIC SUPPURATIVE OTITIS MEDIA

ITS OPERATIVE TREATMENT

BY

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The reasonable man adapts himself to the world; the unreasonable man persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man.—G. B. SHAW, "A Revolutionist's Handbook."

A vast number of mastoid operations for chronic suppurative otitis media performed with the threefold purpose of removing dangerous disease, preserving the hearing, and healing the ear achieve their object. A proportion of these operations fail in part, and patients are disgruntled to find that their ears flow as before. I have examined a number of radical mastoid and modified radical mastoid cavities from various sources to try to fathom the causes of failure and thus evolve a technique which would avoid them.

Radical Mastoid Operation

The observations arrived at after the study of a series of cases are enumerated below. There follows a description of a method of operating which gives a high proportion of dry ears.

1. Many incisions were too short and incorrectly curved. Insufficient exposure hampers good surgery.

2. The bony meatus in some cases was so narrow that proper supervision of the operation cavity must have been impossible.

3. The antrum remained as a recess in the hindmost part of the cavity, filled with granulations, and not epithelialized, in certain cases.

4. Occasionally the bridge had been removed too timidly. Its piers remained untrimmed, leaving the aditus as a gutter between them; over such a surface healing could not possibly take place.

5. In some a prominent facial ridge remained, damming pus and granulations in the mastoid cavity behind it.

6. The existence of a Eustachian fistula spoiled a large number of well-performed radical operations.

7. A high elevation on the bony meatal floor left a hypotympanic trough, difficult to reach in the after-treatment in some of the cases.

8. Stenosis of some of the cavities had occurred due to webs or funnel formation. In the narrow depths of the cavity discharge poured from the mouth of the Eustachian tube.

9. A stitch in one case prevented healing till removed.

10. An island of bare bone existed in a few cases because granulations had failed to spring from it. A completely flat bed of granulations greatly enhances subsequent epithelialization.

Technique of Operation

The incision is prolonged downwards and forwards to the anterior aspect of the tip of the mastoid process. Then, when the membranous meatus is entirely detached, the whole auricle can be turned forwards by the retractor and the bony meatus wholly exposed with the mastoid process.

Many surgeons are at pains to open merely the antrum, and avoid, so far as possible, gouging the rest of the mastoid process. I believe this to be a mistake. If this method is followed the posterior meatal wall must be removed obliquely from behind forwards and inwards. The antrum then forms a posterior recess, and a narrow bony meatus remains. Superior results are obtained if the bone is hollowed out extensively, almost as low as the tip and as deep as the floor of the bony meatus. The whole of the posterior meatal wall is removed entirely, so that no facial ridge remains. Before the removal of the posterior meatal wall has been completed a flap is cut. Ballance's and Korner's flaps are admirable. The latter has the advantage that a small skin flap may be cut, but a larger piece of cartilage removed. The conchal opening then slopes directly into the posterior reach of the cavity. It is quite large, but not unpleasantly obtrusive.

The field is now clear for completing the removal of the posterior wall of the meatus and the bridge. Shavings of bone are removed from below upwards, parallel with the facial canal, so that were the canal opened it would be recognized with its nerve intact. This method is more sure than relying upon the anaesthetist to watch the face. Between the elevation on the meatal floor and the lateral semicircular canal a slight ridge is unavoidably left, because here the nerve lies close beneath.

To avoid exposing the lateral sinus or dura of the middle fossa is a counsel of perfection. Many good surgeons try to follow it, and often fail. Such exposure appears to be of small consequence provided the dura is not damaged. Uncovered dura is resistant to infection, which, in chronic suppurative otitis media, is of low virulence; proof of this is indicated by the healing of most radical incisions by first intention. It is certainly preferable to expose the dura rather than leave a plate of bone so slender that its vitality is in question. Organisms may penetrate it and thrive beneath, with the formation of an extradural or cerebral abscess. Granulations may fail to spring from it, and thus interfere with subsequent healing. If a tiny area of dura is exposed it is safer to prise up or gouge off its thin-shelved border of inner table. Here I may mention that I believe the use of burrs on the bone, and the application of bismuth-iodoform-paraffin paste, either of which blocks the crevices of the bone, and failure to gouge such fresh surfaces of bone as the meatal floor, may similarly be the causes of islets of bone failing to granulate and heal.

The remnant spike of outer epitympanic wall must be carefully gouged off. The elevation on the meatal floor should be lowered as a routine. This makes for easy access to the tympanum in after-treatment. Light curettage of the tympanic annulus and the remaining portion of the tympanum is necessary to get rid of any osteitis. Quite often a shallow osteitis here accounts entirely for the pathology of chronic suppuration, and has been sufficient to defy all efforts at conservative treatment. The hypotympanic area can be safely curetted. In sclerosed mastoids cells are non-existent here. With regard to the vexed question of curetting the Eustachian tube, I have not found that healing is more frequently assured by doing this. Naturally, in common with the rest of the tympanum, the orifice and commencement of the tube will be carefully curetted with a spoon. I do not believe in the existence of peritubal cells when the mastoid elsewhere is acellular.

Any of the faults in technique described may prevent healing. A Eustachian fistula is a natural sequel, and the tube is wrongly blamed. Apart from this, however, a fistula may exist after a carefully performed radical operation, and is the chief bugbear of the operation. Most bleeding points are dry when the artery forceps are removed, but a vessel in the flap usually requires ligature. Chromic gut should be avoided.

After-treatment

Aural surgeons differ in the after-treatment of mastoid cavities, some relying on cleansing with or without drops or powder, others packing with dry or medicated gauze. I have often observed that when at last the granulations have formed a pale, even, flat bed epithelialization very

rapidly follows. Exuberant granulations delay or prevent the process. Anything that would be mildly astringent and absorb moisture should prepare quickly a favourable bed of granulation tissue and thus hasten the process of healing. It should be soluble in the ear secretion, otherwise it will clog the cavity. Boric acid fulfils these requirements. A satisfactory routine is as follows:

After operation the cavity is packed lightly and completely with dry iodoform half-inch ribbon gauze. This is removed in five or six days. Thereafter plain half-inch ribbon gauze, shaken out of sifted boric acid powder, is packed evenly throughout the cavity. This is repeated daily. Eventually, when there is little secretion and the lining is flat, simple mopping followed by insufflating a thin film of powder is all that is required.

Modified Radical Operations

Modified radical operations are performed to remove localized disease and preserve the good hearing present. Such disease is usually located in either or all of the following sites: the postero-superior margin of the tympanic annulus, the attic, the aditus, and the antrum.

I am convinced that there is only one operation worth considering. I refer to that type which differs from a radical operation only in so far that the remains of the tympanic membrane, together with the malleus and incus, are left in position. The bridge and outer attic wall must be removed. A very large proportion of these cases heal and dry with full preservation of hearing. It is a great mistake to remove the incus, as this seriously curtails the hearing. If the hearing is good the incus may be presumed to be quite healthy, or only slightly diseased. Slight disease consists merely in loss of small parts of its substance, and is in no way comparable to the gross osteitis which may exist, for instance, in the outer wall of the aditus or epitympanum. If, therefore, these parts be removed the incus will become buried in healthy granulations, and will heal over satisfactorily.

If it be argued that the pre-operative hearing was poor, or that the incus was found to be grossly diseased and its removal justifiable, then a full radical operation should be carried out, as poor hearing is very seldom made worse by this procedure. It is essential to remove the bridge and outer attic wall, which are frequently diseased and, furthermore, act as a barrier to drainage and epithelialization, which can only occur when the underlying areas are thrown open to healthy granulation tissue. No advantage is sacrificed by removing the bridge, but a wet ear is the common penalty of leaving it.

The soundness of these principles is fully borne out by observing and comparing the results of various types of modified radical operations. Extracting the incus, or leaving the bridge, dissatisfies the patient by reducing hearing or failing to stop the discharge. In that type of conservative operation which I have described as being highly successful, this is only the case if the various pitfalls in technique described in the radical operation are as carefully avoided in this one. The after-treatment should be the same, and care should be taken to avoid damaging the drum membrane.

LOWER SEGMENT CAESAREAN SECTION*

BY

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One of the chief advantages of this operation is that an extended "trial of labour" can be allowed with less danger to the patient. The operation can be performed before labour begins or after labour has been in progress. There is no need for the hurry that there may be in the performance of the "classical" operation in which the breech is delivered first. The contractile part of the uterus is not interfered with, bleeding is less, and consequently there is less danger of shock. The main defence of the patient against sepsis—namely, the blood—is conserved, and that is the outstanding reason why there is less danger of sepsis. The suture line lies tucked away low down, and is less likely to cause omentum or bowel to become adherent to it. Adhesions between the uterus and the abdominal wall are not likely to occur.

Necessity for X-Ray Examination

Radiographs should be taken in cases which are considered likely to require Caesarean section. It would be regrettable to perform a Caesarean operation only to deliver an anencephalic foetus. The radiograph, by showing a collapsed vault of the skull, would prevent this mistake from being made. The presence of twins, unsuspected before radiography, might weigh the scale against operation. A breech presentation in an elderly primigravida might decide the accoucheur in favour of operation, not only to save damage to the pelvic floor of the patient, but to minimize the risk of losing the life of the child.

Operative Technique

After the patient has been anaesthetized the bladder should be catheterized and the vagina lightly packed with gauze wrung out of dettol solution or Bonney's paint.

A short subumbilical incision is made and small towels are clipped to the edges of the wound, after which the peritoneal cavity is opened and packed off to avoid soiling. It is not necessary to use a self-retaining retractor, which requires a longer incision for its employment. Small retractors are preferable, particularly if the bladder is inclined to bulge into the wound. With a clean knife a transverse incision is made in the lower uterine segment just above the reflection of the peritoneum off the bladder, if possible without opening the amniotic cavity. The incision is enlarged with scissors, laterally and slightly upwards, sufficiently to allow the head to be delivered. I have used Bonney's compressor and Willett's forceps to lessen the haemorrhage in the making of the incision, but find that they are not required, as bleeding is generally only slight. Willett's forceps are sometimes useful in assisting the birth of the head.

The fingers of the right hand inserted gently inside the lower edge of the incision in the uterine wall coax the head from the uterus, whilst the left hand is employed outside the abdomen in manipulating the breech to facilitate the birth of the head. I intend to make trial of one blade of Wrigley's forceps instead of the fingers of the right hand, although the fingers can appreciate the resistance of the tissues better than an instrument and are less likely to cause damage. But one blade of Wrigley's forceps is easier to control than one blade of a long forceps, and its use would obviate the insertion of the hand into the uterus, to which practice there might be a serious objection. Suturing is made easy by marking the ends of the uterine incision with tissue forceps whilst the incision is still being stretched by the shoulders, then the shoulders and the rest of the body are delivered.

Delivery of the Placenta

Posterior pituitary extract 1 c.cm. is injected into the uterine wall and the placenta and membranes are delivered by manipulating the fundus of the uterus with the left hand outside the abdomen. The placenta separates quickly, and there is no need to wait for it as may be necessary in natural delivery. It is essential to remove the membranes completely, using in some cases a small dry towel with which to peel them off the lower segment. The hand does not need to be introduced into the uterus in order to secure the placenta.

After the lower edge of the uterine incision has been carefully defined three mattress sutures of hardened catgut are inserted to control haemorrhage. It is important to define

* Read at a meeting of the South-Western Branch of the British Medical Association at Newquay, November 19th, 1935.

the lower edge of the incision because it is apt to retract beneath the bladder, and the unwary might sew the upper edge of the incision to the inside of the uterus instead of to the lower edge of the incision. A continuous interlocking suture is used to oversew the muscular layer which has already been approximated by the mattress sutures. The incision in the peritoneum covering the lower segment is closed with a continuous inverting suture. In a case potentially infected a drainage tube may be used for a few hours in the peritoneal cavity. The two sides of the incision in the parietal peritoneum are brought face to face, as advocated by Blair-Bell in order to minimize the risk of bowel or omentum becoming adherent to the suture line.

The rest of the incision is closed in the usual way, finishing with a subcuticular suture or Michel's clips. In a fat subject it may be advisable to employ deep silkworm-gut sutures, but they may carry infection from the skin to the deeper layers of the wound, and they tend to spoil the appearance of the scar in the abdominal wall by leaving permanent marks, in spite of protection by fine rubber tubing.

Convalescence

Unless it is required to sterilize the patient the uterus is not brought outside the abdominal wall, for when the uterus is not eventrated there is less flatulent distension after operation. If the stomach is seen at operation to be distended with gas a stomach tube may be passed before the patient leaves the operating theatre. I have been using the operation for some years, and am of opinion that it is not only a better operation to perform than the "classical" procedure, from the point of view of craftmanship, but it is followed by an easier convalescence.

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PROGRESSIVE FAMILIAL HYPERTROPHIC NEURITIS (DEJERINE-SOTTAS)

BY

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In 1893 there was recorded by Déjerine and Sottas a distinct entity in the group of familial disorders to which the name "hypertrophic neuritis" was given.[1] Cases were also described by Marie (1906), Boveri (1910), Yokomari (1915), and others, but in 1929 de Brugn and Stern[2] could find only twenty cases recorded in the literature. In the following paper at least four more cases are added, probably the first to be reported from Australia.

Family History

Briefly stated, the family consists of a woman aged 55 years and three of her sons, aged 28, 24, and 21 years, respectively. The notes of these cases are given in full. In the previous generation the mother of the female patient described here had wasting of the peripheral portions of all four limbs, and one other member of the family, at present in Queensland, is said to have the same disability, which is known as a "family weakness": neither of these two has been examined by me.

The members of the family so far examined have marked wasting and loss of power in the lower limbs extending symmetrically as high as the junction of the lower and middle thirds of the thighs. The electrical reactions are those of "reaction of degeneration": fibrillary tremors are present in the muscles, and a secondary foot deformity of the "pes cavus" type occurs in each case. In the upper limbs there is wasting and weakness of the hands and forearms with the development of a claw-hand. The muscles of the arms, shoulders, trunk, neck, and upper two-thirds of the thighs show no change. There is loss of sensation to pin-prick and cotton-wool of glove and stocking type extending as high as the knees and elbows. The peripheral nerves are thicker than normal, especially the ulnar, and the trunks of the brachial plexus are also enlarged.

While the above signs are uniform throughout this family group some members have other abnormal neurological signs. Nystagmus, abnormal pupil reactions, and defects in speech are present in some, while others have loss of sensation to heat and cold and trophic changes in the hands.

Case I

The patient, a widow aged 55 years, has had weakness and wasting of her hands for over twenty years; even before this time she had noticed her hands to be "clumsy," particularly in cold weather. For about the same period she has had some difficulty in walking; the legs are weak, and she is liable to fall over if walking upon irregular ground. For at least thirty years her feet have been deformed. Occasional "numbness" in the left leg has been the only other symptom noted. She has always been in good general health, has brought up a family of five children, and still cooks and does all the work of a large house.

She is a rather thin, short woman of nervous type. The hands are small and the grip is weak, the muscles of the thenar and hypothenar eminences being almost completely atrophied and the forearms wasted to a marked degree. The muscular development of the arms and shoulders is normal. The supinator jerks are absent, but the biceps and triceps jerks are overactive. There is no tremor or fibrillation. In contrast to the normal thighs the legs are thin, and there is a very gross bilateral "pes cavus." The knee-jerks are active, and the hamstring jerks overactive, but the ankle-jerks and plantar reflexes are absent. The muscles of the calves show fibrillary tremors.

There is loss of sensation to pin-prick, cotton-wool, and to heat and cold of the glove type to the elbow and of the stocking type to the knee. Vibration sense and sense of position are normal and there is no ataxia. Cranial nerves are normal, the mental condition is good, and the sphincters are not affected. The peripheral nerves all seem larger than normal and are insensitive to pressure.

Case II

The first son, aged 28 years, a cook by occupation, has a long-standing deformity of his feet. For five years there has been progressive wasting and weakness of the hands and forearms, and recently he was compelled to give up his work as a cook owing to inability to lift heavy utensils. He is unsteady on his feet, and the muscles of the calves of his legs have gradually wasted. He frequently burns his hands at his work and only realizes this when blisters develop. His speech has become slurred, especially during the past few months.

The patient is a healthy-looking adult, with extremely well-developed shoulders, trunk muscles, and thighs (see Fig.). The small muscles of the hands are wasted, with the development of a bilateral claw-hand. All movements of the hands and wrists are weak, while at the elbow and shoulder power appears normal. Fibrillary tremors are present in the thenar eminence on the left side and in both forearms. The biceps and triceps jerks are active, the supinator jerks being greatly reduced on both sides. In the lower limbs there is bilateral "pes cavus," with wasting of the muscles of the calves and distal thirds of the thighs, the muscles being replaced by a firm

elastic type of fibrous tissue. The upper two-thirds of the thighs appear to be normal, in fact are well developed: the movements at both knees and ankles are very weak, there being fibrillary tremors in the muscles of the left calf and thigh. The knee-jerks and ankle-jerks are absent; the plantar reflexes cannot be elicited. The muscles of the legs show complete reaction of degeneration in the peroneal nerve group and partial reaction of degeneration in the tibial muscles.

Partial anaesthesia to light touch, to pin-prick, and to pain, heat, and cold of glove and stocking type extends from the periphery as high as the elbows and the knees. Vibration sense and muscle and joint sensibility appear to be normal. The hands are scarred with multiple burns, some only partly healed, and the subcutaneous tissues are thickened as in Morvan's disease. The only abnormalities in the cranial nerves are a bilateral horizontal nystagmus and pupillary reactions which are sluggish to both light and accommodation. The speech seems slurred, but the vocal cords move normally. The ulnar and peroneal nerves are very thick and completely insensitive even to firm pressure or pinching.

The Wassermann reaction is negative and the sugar tolerance curve of "flat" type, the maximum reading half an hour after 50 grams of glucose being 110 mg. of glucose per 100 c.cm. of blood.

Case III

The second son, aged 24 years, at the age of 12 met with a motor accident and two years later was operated on for a "pes cavus." For the past ten years his legs have progressively wasted and become more weak, until he is now unable to work. He frequently "trips" when walking, and his legs are more troublesome in cold weather. His hands have been clumsy for at least five years, and he is now unable to button his shirt during the winter.

The patient is a man of rather slow mentality, walking with the aid of a stick. The small muscles of the hands have almost completely atrophied and the forearms are thin; the grip is weak. The deep reflexes are active in both arms. No fibrillation can be detected in any of the muscles. The feet show a very marked bilateral "pes cavus," with scars of previous operations and some oedema of the subcutaneous tissues. The muscles of the calves are almost completely replaced by elastic fibrous tissue, and there is very little movement or power in the ankles. The knee-jerks are present but reduced; the ankle-jerks and plantar reflexes are absent.

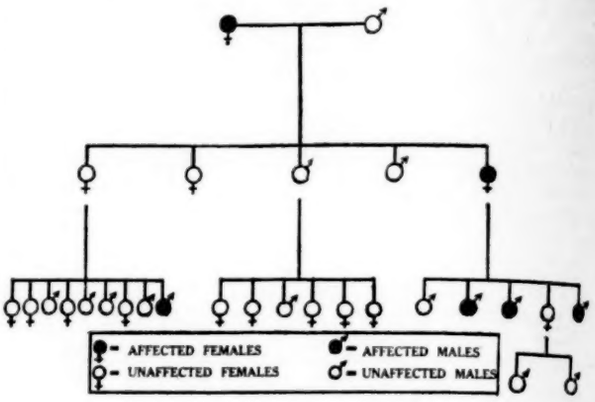
There is partial loss of sensation to cotton-wool and pin-prick of glove type to the elbow and of stocking type to the knee. Sensations to heat and cold and to vibration, and muscle sensibility, are all within normal limits. There is a horizontal nystagmus on looking to the left, but otherwise the cranial nerves are normal.

Case IV

The third son, aged 21 years, a tailor's cutter by trade, four years ago noticed that his feet were abnormally thin and the veins on the surface very prominent. A year later "cramps" began in the muscles of the calves and thighs and the legs became more and more thin. For two years the fingers have been "numb" and useless during the winter; the hands are developing a claw-like appearance and are weaker than previously. For almost one year he has noticed some trouble with his speech, the words being "difficult to get out" and often slurred. Examination of the eyes reveals a bilateral rotary nystagmus and pupils that react slowly to both light and accommodation. There are no other abnormalities in the cranial nerves.

The hands and forearms are extremely thin, the small muscles of the palm being almost completely atrophied. There is marked loss of power in all movements of fingers and wrists. The biceps and triceps jerks are overactive, the supinator jerks being reduced. There is no fibrillation in the muscles, but a fine general tremor is present in both upper limbs. The malleoli are prominent, there is bilateral "pes cavus," and the muscles of the legs and the lower third of each thigh are very wasted. The knee-jerks are overactive; the ankle-jerks and plantar reflexes are not elicited. Glove and stocking anaesthesia to level of elbows and knees includes complete loss of sensation to cotton-wool and partial loss to pin-prick. Sensations to heat and cold and to vibration, and muscle and joint sensibility, are normal. The nerves throughout the body are all abnormally easily palpable, especially the trunks of the brachial plexus and the peroneal nerves.

One son, one daughter, and two grandchildren of the widow (Case I) have been examined, but no abnormality of their nervous systems has been discovered.



Comment

Although the nerves have not been examined histologically it is probable that the four cases described above fall into the group of Déjerine-Sottas's disease—progressive familial hypertrophic interstitial neuritis. Although the onset of the condition is later than in the cases originally described by Déjerine and Sottas,[3] others have been recorded in which the onset was delayed until adult life.[4] The clinical picture of peripheral nerve thickening, symmetrical peripheral wasting of muscles, fibrillation, glove and stocking anaesthesia, and bilateral "pes cavus" is that of Déjerine-Sottas's syndrome.[5] The limitation of the wasting to the forearms, legs, and lower third of the thigh,[6] and the lack of progress of the condition beyond a certain degree of disability, are also characteristics.

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J. E. Blair and F. A. Hallman (*Proc. Soc. Exp. Biol. and Med.*, December, 1935, p. 382) record their observations on the antihaemolysin titre in patients suffering from various staphylococcal infections. The sera were titrated in terms of the international standard antitoxin. Of sixty normal and Wassermann sera, fifty-four had a titre of 0.5 unit or less, the remaining six having 1 unit. Of twenty-five sera from patients with staphylococcal infections other than osteomyelitis, fifteen had a titre of 0.5 unit or less, while the remaining ten sera were ranged over a titre extending up to 22.7 units. Of eighty sera from patients with staphylococcal osteomyelitis, thirty-nine had a titre of 0.5 unit or less, fifteen had 1 unit, ten had 2 units, and sixteen had over 2 units. It has usually been found that sera from patients with osteomyelitis have a high antihaemolysin titre. In the present series, however, approximately two-thirds of these sera fell within the normal range of 1 unit or less. The fact that low titres are often found in patients with staphylococcal infections does not necessarily indicate inability to produce antibodies. This is shown by the observations made on thirty-five patients with osteomyelitis who were treated with staphylococcal toxoid. In every instance the patient responded to the antigenic stimulus by the development of a serum titre ranging from three to thirty times the original titre.

Clinical Memoranda

Severe Reaction following Skin Test

A boy aged 8, who had suffered from asthma since a baby, was sent to me for examination of the nose and throat. These were normal, so I performed a skin test, injecting intradermally 2 minims of the weak solution of "dust-borne protein," made up by a commercial firm, and 2 minims of a control solution. Five minutes afterwards the boy had a severe attack of asthma and a profuse urticarial eruption on the back, chest, and abdomen. There was a large wheal 1½ inches in diameter at the site of injection of the test solution, but the site of the control injection was normal. A subcutaneous injection of adrenaline quickly relieved the attack.

I think this case worthy of record owing to the very severe reaction following the small dose of antigen injected.

Southampton. ROBERT EVANS, M.D., F.R.C.S.Ed.

Full-term Extrauterine Pregnancy: Child Delivered Alive

The following note of a very rare event may be worth placing on record in the *Journal*.

A 7-para, aged 33, was admitted into the Government Headquarters Hospital, Guntur, South India, at 11 a.m. on October 20th, 1935, for pregnancy, with pain in the abdomen and diminished mobility of the foetus.

Previous labours and puerperia had been normal; all children alive. History of present illness was that there had been ten months' amenorrhoea; a month and twenty days after the stoppage of menses she had sudden severe pains in the left of the lower abdomen one morning in the early hours while in bed; it was accompanied by slight discharge of blood from the vagina. This sort of pain continued once every three or four days; she used to faint on these occasions and remain in bed. The pain continued for five months. She used to bleed slightly per vagina once a month; then her pain subsided. Three days before admission she had pain resembling labour pains without any result, and so came to the hospital.

She was seen by me at 12.15 p.m., when the following were noted. She was a thin woman of 33 years; not anaemic, with normal pulse and temperature; heart, lungs, and other organs normal; blood pressure 130/95. There was swelling of the abdomen, more on the left, extending upwards to a point midway between the ensiform cartilage and the navel. On palpation two hard swellings, the size of a foetal head, were felt on the right, one above the other. On the left the swelling was regular and cystic. No foetal parts could be made out. On auscultation a very loud bruit was heard to the left and a little below the navel. Foetal heart was heard a little to the right of the middle line above the navel; the rate was 130 per minute. Vaginal examination found the cervix pushed to the right and not soft; external os closed; a diffuse swelling was felt in the left fornix.

At 3 p.m. I opened the patient's abdomen under spinal anaesthesia through a median subumbilical incision. The uterus, the size of a twelve-weeks pregnant uterus, was found on the right side. On separating the adhesions between uterus and swelling on the left side membranes presented with the head of the foetus underneath. The membranes were torn through and a full-term female child extracted from a cavity in the left broad ligament. There was profuse bleeding. The placenta was separated easily and the cavity plugged with ribbon gauze; the redundant portion of the broad ligament was excised and the cavity in the broad ligament marsupialized. The abdomen was closed in layers. The right side of lower jaw of child was deformed on account of pressure over the spinal column.

Recovery was uneventful, except for a rise of temperature for two days due to malaria and a persistent sinus, which closed on December 10th. The mother and child were discharged well six days later.

Madras. R. G. KRISHNAN, F.R.C.S.I.

Reviews

THE DEVELOPMENT OF LUNG CARCINOMA

The Development of Lung Carcinoma,[1] by KAJ LINDBERG, is a monograph of some 400 pages, and follows a former monograph dealing with the histology of forty-two cases of primary carcinoma of lung. It is a record of a systematic investigation which was made of the bronchi in thirty-nine of these forty-two cases, the author hoping that by this intensive search further light might be shed on the development of lung carcinoma. Atypical bronchial epithelium was found in fifteen cases. Of twelve cases in which both lungs were examined atypical epithelium appeared in seven; in five it was found in both lungs and only in the opposite lung to that containing the carcinoma in two. The commonest site for this atypical epithelium was at the junction of two bronchi. In one case it was found at the bifurcation of the trachea and in three cases in the bronchioles (0.5 to 5.5 mm. in diameter). The atypical epithelium was commonest in those carcinomatous lungs in which the carcinoma was squamous-celled, and it was not found in those in which the carcinoma was columnar-celled. In seven cases atypical epithelium with some degree of downgrowth was observed. In most of these the cells had atypical nuclei. In two microscopic carcinoma was found; in one of them there was a squamous-celled carcinoma the size of a fist in the upper lobe of each lung, while microscopic carcinomata were found in three different places and a fairly general proliferation of epithelium. In the other, a squamous-celled carcinoma in the upper lobe of the left lung was associated with atypical epithelium infiltrating the bronchial wall. In other cases the author considered that there appeared to be a disposition for the development of multiple carcinomata. One of the seven cases had a mixed carcinoma in which small cells predominated, and this was associated with squamous-celled metaplasia of the bronchi.

The size of the nuclei was found to vary within wide limits in any one case, and this variation occurred in columnar as well as squamous-celled types. It was not possible to diagnose carcinoma on the basis of variation in size and shape of the nuclei because a similar variation can be seen in practically normal bronchial epithelium. Carcinomatous infiltration was observed to occur in some cases beneath an intact bronchial epithelium. Thickening of the tunica propria was found to precede epithelial changes in the bronchi; the author thinks that this is caused by the factor or factors which permit invasion, and that these same factors play a part in the production of abnormal cells. He considers that the changes to malignancy are gradual, and that there is no sharp line of demarcation between the normal and the malignant cell. It seems to him extraordinary that the multiple primary carcinomata should only be of microscopic size in those of his cases (except one) showing a clear disposition to multiple bronchial carcinomata in which a proven primary was directly or indirectly the cause of the patient's death. He feels that from his work there emerges a suggestion that the large growths influence the smaller by limiting their development, and he concluded that this limitation or resistance to carcinoma set up by a primary growth broke down just before death and that this breakdown accounted for the small size of the multiple primaries found.

The first 129 pages are taken up with a full discussion of these points and general statements; the remainder

[1] *Arbeiten aus dem Pathologischen Institut der Universität Helsingfors (Finland)*. Neue Folge. Neunter Band. Heft 1–3. *Ueber die formale Genese des Lungenkrebses*. By Kaj Lindberg. Jena: Gustav Fischer. 1935. (Pp. 400; 557 figures. RM. 28.)

of the monograph consists of complete details of the cases described. There are altogether 557 photomicrographs. These are uniformly good, and illustrate the points clearly. There is also a fairly full list of literature bearing on the points raised.

This intensive study of the bronchi was well worth doing, and appears to have been carefully and thoroughly done. It should perhaps be emphasized that the epithelial changes were found in only fifteen cases, and that these were all associated with squamous-celled carcinomata of the bronchi. Squamous-celled metaplasia of the bronchial epithelium is a common finding in any chronic inflammatory condition of the bronchi ; this may have a definite bearing on the production of carcinoma, and certainly on the type of malignant cell produced. But it is highly probable that in an equally thorough search of bronchi showing squamous-celled metaplasia but no macroscopic carcinoma, similar atypical epithelium, downgrowth, and even microscopic carcinoma might be found. Until such a search has been proved negative it is stretching the evidence presented to suggest that it proves that one carcinoma has any influence whatever on another.

WAYWARD YOUTH

Dr. AUGUST AICHHORN of Vienna worked for many years as a director of State institutions for the care of delinquents before he knew anything about psycho-analysis. He was well qualified for his work by his warm sympathy with the offenders and his intuitive understanding of their psychic needs. As Professor Freud says in his foreword to Aichhorn's book *Wayward Youth*,[2] he already knew all that psycho-analysis could teach him so far as practice was concerned, but it gave him a theoretical justification for his treatment and a means of explaining it to others. Explanation perhaps does not go very far, because, although a good deal of the technique of child guidance can be imparted, the real value of the successful child guidance expert is in his own personality. Aichhorn's intimate knowledge of Viennese life, its fine social distinctions and its many dialects, his ability to identify himself with people in all kinds of difficulties, and his great personal charm, enable him to make immediate contact with all sorts and classes of people. Fat, jolly, and comfortable-looking, he is a well-known and greatly beloved figure in Vienna. His book is largely a relation and analysis of a number of situations of individual delinquents, told with great charity and understanding. This kind of individual approach in a book is always interesting, and stands the best chance of being profitable to others. One of the fundamental axioms of his work is that which was independently and so eloquently expressed by the late Dr. Ian Suttie in *Love and Hate*: hatred is a reaction to an unsatisfied need of love and its acceptance. He lays great stress on taking up the child's transference and using it to give the child strength to complete a special piece of work, to change unconscious material into conscious and thereby bring about a permanent change in his whole being—that readjustment of the centre of consciousness to include unconscious components to which Jung has given the name of individuation.

Much of the didactic part of the book will be familiar to child guidance workers, because it is thoroughly sound and based on reality ; it is the knowledge which every student must discover of his own accord if he is to succeed in his quest. It is only necessary to say that this book stands out as the work of a great master of child guidance. Every worker in this field should study it as an indispensable part of his education.

[2] *Wayward Youth*. By August Aichhorn. With a foreword by Siegmund Freud. London: Putnam and Co. Ltd. 1936. (Pp. 236. 10s. 6d. net.)

THE KAISER WILHELM GESELLSCHAFT

For twenty-five years the Kaiser Wilhelm Gesellschaft has been among the most important German societies for the promotion of science in its widest sense. The society is issuing three volumes to commemorate its silver jubilee, of which that now under notice is the second.[3] For its size it is heavy to hold and heavy to read, and unless the prospective reader knows his German very well he will find it a hard task trying to steer his way through the 430 pages, for they contain many words that do not appear in an ordinary dictionary. To the historian of science, however, it will prove an indispensable book. Not only does it give detailed information on the work of the thirty institutes operating under the auspices of the society, but it also includes chapters on the latest developments in natural philosophy, astronomy, physics, atomic chemistry, mineralogy, geology, biochemistry, and biology, each written by a leading expert in the subject. In spite of its excellence, however, this book will not appeal to a very wide public. It makes much too difficult reading for the layman, and the expert naturally will want more details than can be given in a general survey. In the scientific libraries of the world, therefore, this book will find its place as a memorial to the work done by the Kaiser Wilhelm Gesellschaft during that time of its existence when its doors were open to every serious German scientist. We shall look forward to its golden jubilee report in the hope that it will by then have readopted this principle.

IMPRESSIONS OF LIFE IN A MENTAL HOSPITAL

Mr. WILLIAM SEABROOK, a distinguished author and traveller, has written a book entitled *Asylum*,[4] in which he describes his experiences as a patient in an American mental hospital. He had become a confirmed dipsomaniac, and wished to be cured of morbid craving. He realized that the continuation of his mode of life would inevitably kill him in the end, and he had no wish to die. With these thoughts in his mind the author decided to sign the document necessary for his admission to a psychiatric hospital, in the hope of a cure. The story he tells is unusually interesting, especially to psychiatrists. The primitive and infantile regressions of the patients are intuitively sensed by the author. Emphasis is given especially to the complete dependence of the patients on the medical and nursing staff. The patients are described as a bunch of grown men who have lost control of themselves in one way or another and have to be controlled by others—that is, treated like a bunch of children ; in other words, put back in the nursery. The longer Mr. Seabrook stayed the more it seemed to him, often fantastically, to be a kindergarten or nursery. Despite court commitment, desolate bars, it was more like a nursery than a prison. The author had the feeling that he and his fellow patients were treated as children—not as delinquents or bad children necessarily, but rather as potentially decent, irresponsible children, who did not know what was good for them and therefore had to be told. It was " mamma knows best " or " teacher knows best " atmosphere, protective and kindly, but backed up with " mamma will spank " when the children become unmanageable.

Mr. Seabrook explains that he has recorded his experiences with no prejudice—no real purpose, even, beyond that of hoping to do a good piece of reporting. He has not aimed to expose, attack, or praise ; to paint in red, or black, or white. He has only aimed to paint it as it

[3] *25 Jahre Kaiser Wilhelm Gesellschaft zur Förderung der Wissenschaften*. Band II. *Die Naturwissenschaften*. Edited by Max Hartmann. Berlin: J. Springer. 1936. (Pp. 433. RM. 28.50.)

[4] *Asylum*. By William B. Seabrook. London: George G. Harrap and Co. Ltd. 1935. (Pp. 266. 8s. 6d. net.)

was. This objective outlook is admirably sustained throughout an interesting book. Readers will be glad to learn that Mr. Seabrook rarely drinks alcohol, and does not worry about it. He says he has other worries, but he is less unhappy than he used to be when he tried to drown them.

TUBERCULIN

The Tuberculin Handbook,[5] by Dr. HALLIDAY SUTHERLAND, is written in the trenchant style of one who has attained distinction in literary work of a more general kind and who brings much practical knowledge to the task of presenting modern views on tuberculin, in treatment and diagnosis, to the medical profession. Chapter V is particularly good, and the method described of determining the appropriate first dose for the subcutaneous tuberculin test by a preliminary series of intradermal tests in graded dilutions, so as to make sure that no excessive subcutaneous inoculation is given to a markedly hypersensitive subject, is a great improvement on older and cruder methods. Chapter VI, too, in which the co-ordination of *x*-ray examination and subcutaneous tuberculin testing is described, is worthy of careful study by those working on tuberculosis. The earlier chapters are more eloquent, more positive, and less critical than the later practical parts of the book, and some hallowed utterances, better forgotten, are dragged out of limbo. On page 6, for instance, Koch's excellent and illuminating account of his own first human experiment with tuberculin, the injection into himself of 0.25 c.cm. of old tuberculin, is quoted, but also the erroneous inference drawn from it by Koch, that since he himself, a healthy man, could not tolerate without severe symptoms a dose of 0.25 c.cm., and since a healthy guinea-pig could tolerate, without symptoms, a dose of 2 c.cm., "in relation to body weight man is 1,500 times more sensitive to tuberculin than the guinea-pig." In the light of modern knowledge, not then available, it is obvious that no comparison of this kind between an allergic man or animal and a non-infected and non-sensitized guinea-pig is permissible; and it may be assumed that Koch would not have made this generalization in 1891 if he had had before him the observations at our disposal in 1936.

The account given by the author of the uses of tuberculin in treatment is practical, moderate, and suggestive, and should be widely studied. It comes at an appropriate moment when the great success of artificial pneumothorax and other forms of collapse therapy in suitably selected cases has rather distracted attention from those moderately resistant, chronic, bilateral yet "early" cases unlikely to benefit by "collapse," but urgently in need of treatment.

Notes on Books

Aggressive Medicine[6] is the challenging title selected by Dr. JOHN MABERLY for a record of the therapeutic values of certain medicinal combinations which, he contends, either raise the natural immunity of the tissues or produce conditions that successfully resist invading micro-organisms or neutralize their toxins. Two of these combinations are iodized tincture of guaiacol and tincture of guaiacol-chloriodide. Dr. Maberly has for many years prescribed these preparations in a great variety of diseases, and he credits them with many striking therapeutic triumphs. At first sight the critical mind, chastened by previous experiences, may perhaps be inclined to read the message as too good to be true. Yet the record is very confidently presented, and Dr. Maberly examines failures as well as successes, and endeavours to find an explanation both for one and for the other. The final test, of course, lies with experience, and all we need add is that if any practitioner, acting on the main thesis of Dr. Maberly's book, meets with anything like the success which is there set forth, everybody concerned will be more than content.

Professor H. A. GINS's work on the Pathogenesis and Epidemiology of Infectious Diseases[7] is addressed, as we learn from the preface, not merely to laboratory workers, but first and foremost to those engaged in practice who have not had the opportunity of studying the important biological processes occurring at the onset and close of an experimental infection. The work is divided into six parts. After a brief introduction the author deals with infection in its various aspects, including the portal of entry, the early manifestations, experimental work, the various forms of infection, and infection without disease. In the third part, which deals with defence against infection, he discusses development of active immunity, early reaction of the tissues to infection, as shown in particular by experimental gas-gangrene infection, the various forms of active immunity, as exemplified by what occurs in small-pox, measles, typhoid fever, plague, diphtheria, and coccal infections. The fourth part is concerned with resistance and immunity in relation to problems of heredity, as illustrated by the variations in the severity of small-pox history, plague, tuberculosis, and syphilis at different times in their history. In the fifth part, which is devoted to pathogenesis and variations in the causal organisms, Dr. Gins discusses various diseases such as small-pox, typhus, plague, poliomyelitis, epidemic encephalitis, and diphtheria, in which remarkable variations in the clinical course may take place. In the concluding part he states that the aim of the work has been to direct the attention of the young medical generation to the still unsolved problems of pathogenesis, and to warn them that the relatively mild character of most infectious diseases is not likely to be permanent.

The *Transactions*[8] of the Ophthalmological Society, vol. lv, contains the reports of the annual congress, held in London, and of the Oxford Ophthalmological Congress, together with miscellaneous papers on a variety of subjects of interest to all ophthalmologists. In addition, it includes the papers read at meetings of the affiliated societies, and is thus representative of current progress in British ophthalmology. The Bowman Lecture, by C. H. Usher, "On a Few Hereditary Eye Affections," occupies 81 pages, and the Doyne Memorial Lecture, by M. L. Hepburn, "Role Played by the Pigment and Visual Fields in the Diagnosis of Diseases of the Fundus," 78 pages. The volume is well illustrated, and the method of grouping contributions on specific subjects is commendable. There is a useful index of authors and subjects.

Things Ancient and Modern[9] is not an autobiography, but a series of reflections and reminiscences. Dr. ALINGTON looks out on the pageant of life from the pleasant windows of Marlborough, All Souls, Shrewsbury, and Eton. There is nothing of the pedant about this distinguished schoolmaster, who has learnt "to walk with kings, nor lose the common touch." He writes with disarming modesty and almost boyish humour. "I shook hands with President McKinley five times in twenty-four hours, though the glory of this achievement was somewhat dimmed by the fact that on the steps of the White House I was taken for a waiter by the Secretary of State." The Dean of Durham makes out a good case for his unorthodox theory that Greek, rather than Latin, should be the keystone of classical education. Light and serious veins are happily blended in this book, which should find an equally welcome place in the library or at the bedside table.

[5] *The Tuberculin Handbook*. By Halliday Sutherland, M.D. London: H. Milford, Oxford University Press. 1936. (Pp. 96. 7s. 6d. net.)

[6] *Aggressive Medicine*. By John Maberly, M.R.C.S., L.R.C.P. London: Baillière, Tindall and Cox. 1935. (Pp. 232. 10s. 6d.)

[7] *Beiträge zur Pathogenese und Epidemiologie der Infektionskrankheiten*. By Professor H. A. Gins. Leipzig: Georg Thieme. 1935. (Pp. 127; 6 figures. RM. 5.50.)

[8] *Transactions of the Ophthalmological Society of the United Kingdom*. Vol. lv. Session 1935. London: J. and A. Churchill, Ltd. 1936. (Pp. 638; 267 figures. 30s.)

[9] *Things Ancient and Modern*. By C. A. Alington. London: Longmans, Green and Co. 1936. (Pp. 316. 12s. 6d. net.)

The Medical Department of Kodak Limited (Kingsway, W.C.) has started a new occasional publication entitled *Radiography and Clinical Photography*. It is designed to give information with regard to existing *x*-ray films and apparatus, new material issuing from the Kodak research laboratories, and advice as to new technique and information generally on all matters embraced under its title. The first issue contains articles on stereoscopic radiography and distortion, on cholecystography, and on a new process for making an *x*-ray film negative and a negative print at one exposure.

The Food Education Society (29, Gordon Square, W.C.1) has issued an attractively printed booklet, price 3½d., post free, entitled *Meals for Day-School Children, with Packed Dinners*. Prepared by experts, it has won the approval of those interested in child welfare from various standpoints, and is commended by Sir Robert McCarrison in an introduction.

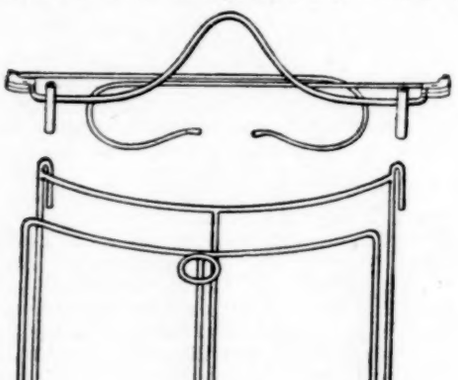
Preparations and Appliances

ASEPTIC FACE MASK

Dr. T. L. P. BENNETT, tuberculosis officer, Fulham, writes:

The examination of chest cases entails a certain amount of risk from contamination by particles or droplets of infected saliva when patients speak or are asked to cough, and as many patients do not remember to cover the mouth whilst coughing it is inevitable that infected material is expelled into the consulting room and not infrequently into the face of the examining doctor.

The simple face mask (here illustrated) consists of a nosepiece and earpiece fitting in a similar manner to an ordinary spectacle frame, with a detachable mouth shield carrying a slip of filter paper. The patient is asked to put on the nosepiece, which (with the light springs behind the ears)



adjusts itself; the mouthpiece with its protective filter paper can then be slipped on, and this is effective in catching infected matter. Pieces of filter paper about 5 by 3 inches are prepared before a clinic, and can be easily slipped into the frame and as easily removed with forceps without soiling the fingers; and it is suggested that if the ends of the paper are folded there will be no possibility of it slipping out sideways.

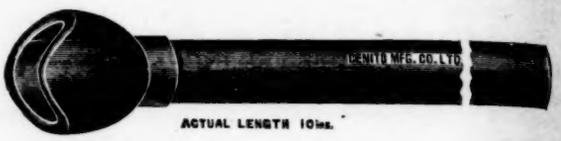
The advantages claimed for this contrivance are: (1) its simplicity and light weight (1 ounce complete). (2) It is easy to clean, being entirely of silver-plated steel wire. (3) It does not interfere with the patient's vision, talking, or breathing, and is easy to adjust without tying, or stretching elastic bands. (4) It can also be used for inhalant, and a drop of some medicament such as guttae cinnam. co. (Brompton Hospital) is very soothing to the patient whilst the mask is being worn.

The face mask has been made to my design by Messrs. Allen and Hanburys Ltd., surgical instrument makers, Wigmore Street, W.2.

A POCKET TRANSILLUMINOSCOPE

Mr. HAMILTON BAILEY, F.R.C.S. (London, W.1), writes:

Anyone who is in close touch with clinical surgery will have seen scores of cases where the diagnosis has been vitiated, occasionally with disastrous results, by not carrying out the



test for translucency or by carrying it out inefficiently. In the absence of a dark room a wooden stethoscope or a cardboard carton is helpful, but the former is too small to make it reliable. The transilluminoscope shown in the figure

can be obtained from the Genito-Urinary Manufacturing Company at a very small cost. The rubber end-piece fits the eye accurately, and it renders eliciting the test for translucency a pleasure instead of a nuisance.

NEO-HEPATEX

"Neo-hepatex" (Evans Sons Lescher and Webb Ltd.) is a fractionated liver extract for intravenous or intramuscular injections. Preparations of this type have proved themselves of outstanding value in the treatment of pernicious anaemia, and are to-day regarded by many as the method of choice in the treatment of this disease. The special merits claimed by the makers for their new preparation, which supersedes hepatex, is that it is almost colourless and free from depressant and toxic factors. The haemopoietic value has been established by a series of independent clinical trials. The makers state that in a case of pernicious anaemia of medium severity a satisfactory response can be produced by 2 c.cm. of neo-hepatex on each of three successive days, and that 2 c.cm. a week is a usual maintenance dose.

A MANDELIC ACID PREPARATION

"Neoket" (Boots Pure Drug Co. Ltd.) is a preparation of mandelic acid combined with sodium bicarbonate, sodium acid phosphate, and flavouring agents. The result is a pleasantly flavoured effervescent preparation. The makers claim that the acid sodium phosphate is an effective substitute for ammonium chloride in producing urinary acidity. The value of mandelic acid in urinary infections is now firmly established and the popularity of the drug should be increased by the fact that it has been found possible to prepare it in a form that is pleasant to take.

THEVETIN

"Thevetin" (Eli Lilly and Co. Ltd.) is a glucoside obtained from a South American tree *Thevetia neriifolia*. The digitalis-like action of this glucoside was established in 1876, and recently it has been fully investigated by Chopra and by Chen. Pharmacological assay has shown that the cardiac activity of thevetin is about one-eighth that of ouabain. The glucoside is soluble in water, and the solutions are fairly stable. It produces irritant gastro-intestinal effects when given by mouth, and therefore is best suited for intravenous administration. The clinical need for cardiac glucosides which can be administered intravenously is well known. The makers claim that thevetin has a wider margin of safety than ouabain, and that it has less cumulative action than digitalis glucosides.

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SATURDAY, APRIL 18th, 1936

THE PHYSICAL EDUCATION REPORT

In November, 1934, Lord Kennet, then Sir Hilton Young and Minister of Health, attended the Council dinner of the British Medical Association, and, in replying to the toast of "The Common Health," asked whether something could not be done by the medical profession to bring home to the people of this country the benefits of physical culture. He pointed to the development in this direction in European and American countries, where physical culture had become part of the social structure. The Chairman of Council, Dr. E. K. Le Fleming, went into this matter with the Minister, and two months later the Council set up a committee to examine the present position of physical education from the point of view of the improvement of national health and physique. The committee (with Dr. Le Fleming as chairman) was expressly constituted to obtain not only medical opinion, but also professional and technical information. At the outset it was decided that the inquiry would best be conducted by a number of subcommittees, each responsible for one part of the investigation. The parent committee met four times, and its six subcommittees held thirty-nine meetings in all. Generous assistance was given by many organizations and individuals, and as an aid to its exploration of the present state of physical education in this country and abroad the committee issued four questionaries. The report came before the Council of the Association on April 7th, and the full text, with appendices, appears in our *Supplement* this week. By authority of the Council it will be reprinted in pamphlet form and placed on sale to the public at 6d. a copy.

The report is comprehensive, well arranged, and clearly phrased. In the opening paragraph the committee records its conviction that there should be in future a far closer and more intimate relation between physical education and the science and art of medicine than has existed in the past. The aim of physical education, it declares, is to obtain and maintain the best possible development and functioning of the body, and thereby to aid the development of mental capacity and of character. The mind and body are so essentially one that a divorce between them in what is commonly called education appears wholly unscientific to modern eyes. "An educated body is a balanced body, just as an educated mind in the true sense is a balanced mind . . . perfection of balance—physical, mental, and spiritual—can be the only true and scientific aim of education. Balance results from the harmonious development of the body as a whole." This vital point was overlooked in the old gymnastics, which too often bred muscular strength at the expense of harmony and agility. Again, to quote from the report, "men and women, especially those of middle age, who have allowed their bodies to fall into shapeless proportions and ungainly postures and their limbs to become shrunken and deformed are a reproach to our sense of physical fitness. The absence of adequate education in the care of the body has led many to accept without thought the deformity of their bodies as something beyond their control." The correction of this and other erroneous ideas, and the putting of physical culture into its rightful place as one of the great social services, were two main objects which the committee kept in view.

After drawing attention to certain general factors in the maintenance of physical fitness—exercise, fresh air, sun bathing and air bathing, nutrition and diet, clothing, posture, alcohol, and tobacco—the report considers the physical education given in schools under the three heads of formal training, recreative training, and instruction in hygiene. The position is then surveyed in turn in the public elementary school, the boys' preparatory school, the junior technical school, and the public and secondary schools for boys and girls. It is evident that physical culture in the schools of this country leaves much to be desired. As for the universities, the committee has little to say, because physical education is generally "conspicuous by its absence in these centres of higher learning"—an omission to be deplored and remedied. The report then discusses a modern development of great importance—the appointment by local education authorities of expert organizers of physical education. Chapter III is devoted to physical culture for those no longer attending school, because if this training is to be of permanent value to the individual it should be continued under expert guidance beyond the age of leaving school. An outline is given of the existing provision, and suggestions are made for future developments. The committee believes that the most practical solution of the difficulty of providing recreative training for young persons lies in mutual understanding and active co-operation between voluntary and official bodies. Here the need is stressed for awakening in the individual a consciousness of the value of personal physical training. Chapter IV surveys in detail the training of teachers and leaders. A primary essential to the success of any large-scale programme is a sufficiency of qualified instructors, and in this matter the Board of Education can give valuable help. The committee considers that the best way of promoting health and physique through physical recreation on a national scale is by co-ordinated action, planned and carried out by some central authority which draws together existing experience and knowledge into a common pool. It hopes that the Central Council of Recreative Physical Training may be able to shoulder this responsibility and unite in a common policy the endeavours of the Board of Education and the many voluntary organizations which have grappled so courageously with the problem of individual physical fitness in the face of increasing industrialism.

Chapter V, on medical supervision of physical education, begins by observing that our profession has hitherto been concerned chiefly with physical treatment of the abnormal rather than with the normal, and with the individual rather than with the community. Nevertheless, doctors attending communities such as schools, the Defence Services, industrial organizations, and the like, have long been pressing the need for extending education in physical training to the whole population. The doctor, too long absorbed in treatment of individuals, is more and more coming to realize that he has an important part to play in furthering the communal well-being, and that he owes a duty to those in health as well as to the sick. The committee urges that not only should there be regular medical examinations of pupils in every type of school, but in all matters touching the health and physical development of the individual pupil there should be close co-operation between all concerned. The head master or mistress, the doctor, parents, the gymnastic teacher, and the general teaching staff should work together in promoting the physical welfare of the individual boys and girls. Adequate medical supervision should be available to ensure that unfit children do not take part in unsuitable or excessive games or exercises, and that undernourished children have enough supplementary food to allow them to gain benefit from the regular physical exercises.

With regard to voluntary organizations, it is noted that few of the clubs replying to the committee's questionary arrange for medical supervision of their physical activities. Closer co-operation is recommended between the health services and the educational services, whether central or local, in relation to the physical education of the population. The medical and physical training staff of the local authority should be available for consultation in connexion with "keep-fit" classes and other recreative courses in the area. With regard to physical training colleges, the committee recommends that entrants should be subjected to thorough medical examination, with frequent re-examinations of the students in training. Further, the medical profession should co-operate with the gymnastic profession by investigating the physiological requirements and effects of the various exercises, with a view to scientific arrangement of the syllabus of training. Post-graduate courses should be established to give doctors the special training which the medical supervision of physical education demands.

The committee's general conclusions are given in seven paragraphs, followed by a chapter in which are gathered together the detailed recommendations already set out in black type at the end of each of the preceding sections. The four appendices include a note on the history of physical education, by Mr. E. Major, and an outline of the provision made for physical education in a number of foreign countries. The report should be studied by every medical man and woman who wishes to help in promoting the fitness of the people and in assisting them to make wise use of leisure.

SIMPLIFYING THE INCOME TAX

Income tax nowadays is so important an element in the private as well as in the national exchequer that a plain and intelligible code for the guidance of the ordinary man would be a boon indeed. Nor is obscurity the only fault in our present miscellany of statutes; ambiguity is frequent, and can be used to the disadvantage of individual taxpayers, or, where taken advantage of by those able to find gaps in the fiscal net, to the detriment of the general body. These facts were plain when Mr. Winston Churchill appointed the Codification Committee in 1927, and they are even plainer to-day, when, after more than eight years' work, the committee has produced its report and draft Codification Bill. It has made it quite clear that any desire for a plain statement of the law in language so simple that it can be easily and fully understood by those unpractised in taxation must remain unsatisfied. Probably life to-day is too complicated for any simple rules to cover effectively so varied a conception as "income," and in any case the limitations within which the committee was required to work—that is, that they must leave substantially unaffected the liability of the taxpayer and the general administration—precluded it from recommending the drastic changes which are necessary for any effective simplification of some sections of the code—for example, of the Dominions income tax relief.

The changes suggested fall in the main under two heads. First, a general rearrangement and tidying up of the 800 sections at present scattered through nineteen different Acts of Parliament to produce a coherent and systematic statement of the law; and, secondly, an improvement in the phraseology employed, in order to avoid ambiguity and reduce the opportunity for litigation. The committee was an exceptionally able and experienced one, especially after the addition of Lord Macmillan as chairman in 1932, and its draft Bill may confidently be assumed to be the best possible attempt to solve the problem within the limits mentioned. One of the most prominent features of the proposals is to substitute fifteen "classes" of income for the existing much subdivided five "schedules." In passing, we observe that professional profits remain under "D," and salaries, etc., under "E." The general rules for deductions are unaltered, but are more clearly stated. At present the fundamental rule that expenses which under ordinary commercial principles are proper trade or professional expenses shall be allowable unless specifically forbidden in the statute, was laid down by the courts in the "Usher" case years ago, but it is now to be specifically stated in the statute. The "wear and tear allowance" should, it is suggested, cease to be a special deduction from the assessments, and the appropriate amount regarded instead as a business or professional expense. This will be welcome to medical practitioners generally, and will help to avoid the confusion that in present circumstances often arises between the "depreciation" and "obsolescence" allowances. The latter is an

effective supplement to the former, and there is no reason in common sense why both, and not merely the latter, should not be treated as expenses. Among the "recommendations for an amendment, as distinct from a codification, of the existing law, is that "the extreme rigour of the law" as applicable to the "extent of the allowance of expense in the case of employments" should be reconsidered. It is interesting to note that the particular case of hardship quoted is that a medical officer of health is unable, according to the decision in Simpson *v.* Tate, to deduct the cost of his subscriptions to medical journals, and it is to be hoped that a recommendation from so authoritative a source will receive prompt attention.

One feature of the development of the income tax has been the increase in the number of various allowances which have become necessary to avoid the hardships otherwise inevitable with such high rates of tax. It is a curious fact that nowhere in the existing statutes is there a clear and easily available statement as to how claims should be made or to whom they should be sent. It is proposed to rectify this by dividing all claims into two classes: the ordinary type of claim will in future be made to the local inspector of taxes, but certain specified exceptions will be lodged with the Board of Inland Revenue. This differentiation between "local" and "central" claims is not likely to cause confusion, and should put the whole matter on a clear and definite footing. Needless to say, the claimants' rights of appeal to the General or Special Commissioners are preserved. The committee considered memoranda supplied by nineteen different representative bodies, but we must assume that, however exhaustive and careful this study of the subject may have been, the specific proposals in the report will attract criticism, and it is unlikely that Parliamentary effect can be given to them at once. Several months will probably be required for the official consideration and digestion of the report before the Bill can be introduced as a Government measure. But we are inclined to prophesy that the Bill, or something very like it, will be introduced in 1937 and given statutory authority for the financial year 1938–9, and there are many reasons for desiring that consummation to the committee's labours.

THE FUNCTIONS OF VITAMIN E

Matill and Conklin observed in 1920 that rats reared on whole milk, while appearing to be healthy, were usually sterile. Evans and Bishop in 1922 showed that unless certain food substances were added to the supposedly complete dietaries of pregnant rats the foetuses died *in utero*. Sure, in the following year, proposed that this newly discovered anti-sterility factor should be referred to as vitamin E. The vitamin is fat-soluble, and is present in many natural foods. Wheat-germ oil is its greatest known source. An ordinary mixed diet contains sufficient vitamin E. But if animals are fed on a deficient diet the males suffer from an irreparable degeneration of the germinal epithelium of the testis; the sex glands of the female are unaffected, but the foetuses die and are either resorbed or expelled. Vogt-Möller in 1931 published an account of two pregnant women with previous histories of spontaneous abortions who received wheat-germ oil and were each delivered of a normal living child. In 1933 he reported nineteen cases of habitual abortion treated with vitamin E, of which sixteen went to term, and four cases of sterility, of which two patients conceived and gave birth to living children. E. M. Watson[1] has recently published the results of sixty-five cases treated with wheat-germ oil. Of these, twenty-eight patients had had two or more previous abortions; twenty-one gave birth to healthy living children. Of nine patients with only one previous miscarriage eight were successfully treated. In eleven out of fifteen cases of threatened abortion pregnancy remained uninterrupted. In thirteen cases of sterility none responded to treatment by becoming pregnant. Successful results were also recorded by Dr. D. W. Currie in the *Journal* of April 11th (p. 752). E. Shute[2] has noted that in 70 per cent. of women prone to abort spontaneously the blood serum shows an abnormal resistance to proteolysis by trypsin. This phenomenon appears to be associated with lack of vitamin E, for on the administration of wheat-germ oil tryptic activity became normal. He suggests that the demonstration of the anti-proteolytic factor may be used as an indication for the administration of vitamin E. I. W. Rowlands and E. Singer[3] injected into oestrous rabbits extracts of the pituitaries of non-pregnant and pregnant rats fed on vitamin-E-deficient diets. To produce ovulation and luteinization in the rabbits' ovaries roughly twice as much was required as when the extracts were made from the pituitaries of control rats fed on a normal diet. Numerous cases of habitual abortion successfully treated with either corpus luteum extracts or with luteinizing extracts of pregnancy urine have been reported, and the percentage of successes seems to be similar whichever form of treatment is employed. One of the functions of the corpus luteum during early pregnancy is to inhibit uterine contractions, and it is probable that there is a deficiency of corpus luteum secretion in cases of habitual or threatened abortion. This defect may be corrected by injection of a corpus luteum extract. Whether the conclusion is justified that the same effect may be obtained by administration of a pregnancy urine extract which will ensure the normal activity of the corpus luteum, or by giving vitamin E to provide for the normal secretion of luteinizing hormone from the pituitary itself, can be shown only by further investigations.

OPHTHALMOLOGICAL SOCIETY'S CONGRESS

The time when silver preparations had no competitors in the prevention and treatment of ophthalmia neonatorum has long since passed. The successful revolt against silver nitrate as a prophylactic measure is now indeed of many years' standing, but of late years the place of silver in the treatment of gonococcal conjunctivitis has also been seriously questioned. Mr. J. D. M. Cardell, in opening the discussion on ophthalmia neonatorum at the annual congress of the

[1] *Canadian Med. Assoc. Journ.*, 1936, xxxiv, 134.
[2] *Journ. Obstet. and Gynaecol. British Empire*, 1936, xliii, 74.
[3] *Journ. Physiol.*, 1936, lxxxvi, 323.

Ophthalmological Society, held at the Royal Society of Medicine from April 2nd to 4th, strongly advocated the methods which were employed by the late Mr. M. S. Mayou, holding that acriflavine is superior to silver nitrate. A paper read by Mr. Davenport for Dr. Amat advocated mercurochrome treatment, a procedure for which it was claimed that it had been instrumental in abolishing ophthalmia neonatorum in the hospitals in Madrid. These views did not pass unchallenged, and a number of speakers asserted their faith in the older methods. At the session held on Friday night Sir Arnold Lawson and Sir Ian Fraser spoke on the recent development of "talking" books for the blind. The gramophone has been adapted to revolve at about one-third of the usual speed, and so made available for "talking" purposes; the records play for twenty-five minutes and an average book can be recorded on ten disks. A number of different models have been evolved, and a beginning has been made with the publication of fifteen books, one being the Gospel of St. John and another a popular detective story. These books are available both for sale and for loan. The great drawback in their production is the small editions in which they can be brought out, making a book relatively expensive. Sir Ian Fraser discussed plans on hand for enlarging such editions. Amongst other papers read at the congress the subjects ranged from the highly technical contribution on the light threshold in the macular and perimacular regions, by Mr. Ransom Pickard, to the clinical contribution on the pathology and treatment of phlyctenular keratitis, by Mr. Arnold Sorsby, Dr. R. Hamburger, and Miss L. R. Benham. The latter paper is discussed below.

PHLYCTENULAR KERATITIS

It was in 1721 that St. Yves clearly differentiated conjunctivitis of a generalized type from that in which the reaction was essentially localized. It is this distinction which underlies the differentiation of phlyctenular ophthalmia from the more usual forms of conjunctivitis, which involve the tissue in a more uniform manner. The aetiology of the generalized forms of conjunctivitis has long since been shown to be multiple; phlyctenular ophthalmia has, however, no definite aetiology, and the literature on the subject gives no clear guidance as to whether the condition may be of multiple origin or is to be regarded as a specific reaction. Special interest attaches to phlyctenular ophthalmia, not only for the great suffering it causes in children, but also because of the amount of permanent visual defect arising from corneal scarring. Moreover, it has general implications, for tuberculosis has frequently been imputed as a cause of the affection. In their paper read before the Ophthalmological Society on April 3rd Mr. Arnold Sorsby, Dr. R. Hamburger, and Miss L. R. Benham brought forward a mass of evidence supporting the view that in a large percentage of cases the phlyctena is to be regarded as a sign of tuberculous infection. The work they did at White Oak Hospital, Swanley, with its unique clinical material, confirms the findings of other observers that somewhere about 80 per cent. of phlyctenular cases show positive Mantoux reactions, this still being the case when only children under the age of 6 are considered. Moreover, *x*-ray examinations of the chest in their series of 116 phlyctenular cases revealed tuberculous lesions, some of them probably active, in no less than 70.7 per cent., as against 16.1 per cent. in a control series of eighty-seven cases of blepharitis. These findings, too, are parallel to those reported by other observers. That the phlyctena is not to be regarded as a sign of clinical tuberculosis is borne out by the fact that in their series there were only three cases of manifest tuberculosis, and stomach washings in fifty cases gave negative results. One point of interest is the high incidence of tuberculosis found in a series of 238 phlyctenular cases admitted to White Oak Hospital from 1924 to 1930; when their after-history was traced, it was found that fourteen of them, or 5.9 per cent., subsequently required hospitalization for tuberculosis, giving an incidence approximately ten times as high as the notification rate for tuberculosis for the corresponding age group. Arguments were advanced that phlyctenular keratitis is to be regarded as a sign not of tuberculous disease but of tuberculous infection, and that this infection occurs in phlyctenular cases at an earlier age than in the normal child population. In the majority of patients with phlyctenular conjunctivitis, as in the majority of infected children generally, the infection is overcome, although in the former, perhaps because of their early infection, there is more tuberculosis in later life. As to the cases in which no tuberculous infection could be found, it was held that they are to be regarded as a similar allergic manifestation of a different aetiology, for experimentally the phlyctena has been proved to be a non-specific nodular reaction of the conjunctiva. It would seem that this work opens up the possibility of harmonizing the conflicting theories advanced on this subject for a number of years. The recognition that in about 75 per cent. of cases tuberculous infection is the underlying condition is a fact which deserves the notice of tuberculosis authorities.

THE ANTI-NOISE CAMPAIGN

The Anti-Noise League, in furtherance of its propaganda, has brought out a neat little quarterly under the name of *Quiet*[1], the first number of which has enlisted some well-known writers. One of these is Mr. E. V. Lucas, who has delved into Shakespeare and produced a score of slogans for the League's use. It is almost as dangerous to quote Shakespeare as to quote the Bible, and if there were a noise league it could match Mr. Lucas's quotations with a string of others in praise of noise. In *The Tempest*, for example, it is a recommendation to the shipwrecked sailors that the isle is "full of noises, sounds, and sweet airs." In *King Lear* some connexion is suggested between a quiet country and one open to invasion—"France spreads her banners in our noiseless land." And the case of Macbeth—"How is't with me when every noise appals me?" suggests that over-sensitiveness to noise is the mark of an abnormal mental state. There are plenty of other passages which point to Shakespeare's ideal as being not a muted but an uproarious and roystering world. The League, however, has made it clear that it does not stand for noiselessness, but for the control of noise and the abatement of offensive noises, and such a council as the one over which Lord Horder presides

[1] Price 6d., from the offices of the League, 66, Victoria Street, S.W.1.

ensures that a scientific and balanced view, not a faddish one, will be taken. One article in this publication deals with a source of noise from which the future generation may suffer most—namely, the noise of aircraft. An aircraft engine is supposed to be the noisiest mechanism yet contrived. Dwellers in the neighbourhood of aerodromes, where pilots when leaving have no alternative but to proceed at full throttle straight to windward until they have achieved a reasonable height, are to be commiserated with, unless some silencing device is discovered or they develop a selective deafness as people do who live near railway junctions. It is disappointing to be told that while very great progress has been made in reducing the amount of noise which reaches the pilot and the passenger the noise heard by people on the ground, though it originates from the same sources, cannot be controlled in like manner.

MEDICINE ON THE FROZEN COASTS

The ninth annual report of the Grenfell Association of Great Britain and Ireland covers the twelve months ended September 30th, 1935, and contains the usual details of the arduous but highly successful work that is in progress on the frozen coasts of Labrador and Northern Newfoundland. For example, the North-West River Station is compared with "a country itinerant medical practice, helped out by a small cottage hospital, and associated with a manifold Christian social service, including agricultural and industrial efforts, with frequent excursions into the realms of parish priest, navigator, and judge." Yet there is now only one known active case of pulmonary tuberculosis within fifty miles, no scurvy, beri-beri, or rickets, and in twenty-three years there has been no maternal death in childbirth. The nurses at the six Grenfell nursing stations have great responsibilities, since they can but rarely receive visits from the medical practitioners in their districts, sometimes only one during the entire winter. St. Anthony Hospital in Northern Newfoundland admitted 766 patients in 1934, and an increasing amount of surgical tuberculosis work is being done. From this centre two hospital ships travel up and down the long coast-line, and yet during the months when navigation is possible the hospital is overcrowded, despite its enlargement. It was rated A1 in 1927 by the American College of Surgeons, and is thus on an equal standing with the leading hospitals in the United States and Canada. Around it as a nucleus the Mission Station has gradually evolved.

HEALTH THROUGH EDUCATION

The annual report for 1935 of the Industrial Health Education Society[1] points out that in two respects the work of the society is unique. No other organization is doing precisely and continuously the same thing; and no other is exercising the same degree of influence at so small an administrative cost. The money contributed goes in giving personal education to enable the worker to maintain health in the varying conditions of employment. "The human interest aroused by these talks to workers, the choice of themes of intense moment to them in their daily lives, the eager questionings to which the lecturers are subject: these are eloquent of the society's importance in the scheme of human affairs." The report notes how each trade differs in the nature of the ailments; for example, the baker's dermatitis, the painter's colic or other manifestations of lead poisoning, the garage worker's headache due to CO poisoning, the "fume fever" of the metal caster, the proneness of certain trades to tuberculosis, others to silicosis, and the susceptibility of the wood worker to skin affections. For most of these troubles "something" can be done by prevention and educational measures. While the work of the Home Office by regulation and inspection in the factories has effected immense improvements the enlightened co-operation of the workers is still essential. During the past ten years 4,000 health talks have been given under the aegis of the society and at the desire of the workers themselves. With more money the scope and intensity of its activities could be increased.

[1] Tavistock House North, Tavistock Square, W.C.1.

DENTAL TREATMENT OF PATIENTS WITH HAEMORRHAGIC DIATHESIS

From time to time the dental and medical journals contain accounts of deaths due to haemorrhage following extraction of teeth of patients whose general condition predisposes to abnormal bleeding. The published records do not, it is believed, represent the total of such fatalities, and there are many more cases which give rise to grave anxiety before bleeding is finally arrested. All will agree that in order to minimize the danger there ought to be the fullest measure of co-operation between the medical and dental professions, and we therefore offer some practical suggestions to that end. The dentist would do well to inform the patient's doctor of any abnormal bleeding, and refuse to perform any further radical dental operation without first consulting the patient's doctor. To the doctor we make the following suggestions. He should acquaint the patient's dentist of any general condition predisposing to haemorrhage, and recommend the patient to obtain dental advice at frequent intervals, say six months, in order that early stages of diseases of gums and teeth may be detected and treated, thus avoiding the necessity for extraction. The parents of children exhibiting tendency to bleeding, or in whose family there is a history of bleeding, should be recommended to obtain regular dental advice and treatment so that the temporary teeth may be retained and ultimately shed naturally, and that the first permanent molars (often mistaken by them for temporary teeth) may be conserved.

By an Order of the Committee of Privy Council, Mr. Richard K. Law, M.P., has been appointed a member of the Medical Research Council in the vacancy caused by the retirement of Mr. W. S. Morrison, K.C., M.P., on becoming Financial Secretary to the Treasury.

Sir Comyns Berkeley has been elected chairman of the Central Midwives Board in succession to Dr. J. S. Fairbairn, who has retired from the Board.

TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some diseases of the blood and blood-forming organs met with in general practice.

PERNICIOUS ANAEMIA AND OTHER MACROCYTIC ANAEMIAS

BY

L. S. P. DAVIDSON, M.D., M.R.C.P., F.R.C.P.Ed.

It is necessary to emphasize that there are many types of macrocytic anaemia which differ widely one from another in their aetiology, response to treatment, and their blood picture, excluding the common factor of increased diameter of the erythrocyte. For convenience, however, it is possible to divide all macrocytic anaemias into two groups.

Group I contains the macrocytic anaemias which develop from a megaloblastic bone-marrow consequent on a deficiency of the factor necessary for the continuation of normal blood formation. This factor, often described as the "specific anti-anaemic factor," is produced in the stomach as the result of the action of a gastric enzyme on food, and is absorbed from the intestine, stored in the liver, and supplied as required to the bone-marrow. Anaemias developing consequent on a deficiency of the specific anti-anaemic factor belong to the category of megalocytic anaemias.

Group II consists of those anaemias in which the macrocytosis results from causes other than a deficiency of the specific anti-anaemic factor; it is a more ill-defined and heterogeneous group of relatively rare macrocytic anaemias resulting from widely differing causes. The macrocytosis is secondary, in the majority of cases, to prolonged stimulation or irritation of the bone-marrow. Blood formation proceeds on a normoblastic basis, but owing to its excessive activity the parent cells in the bone-marrow are primitive normoblasts, and as a result many of their offspring entering the peripheral circulation are larger and more immature than normal erythrocytes. Macrocytic anaemias belonging to Group II are present in (*a*) some cases of haemolytic anaemia—for example, acholuric jaundice, sometimes of the congenital but more usually of the so-called "acquired" type; (*b*) occasionally in malignant malaria and lead poisoning; (*c*) not infrequently in leucopenic leukaemia and in the terminal stages of leukaemia; and (*d*) in cases of Hodgkin's disease and malignant disease, in which the bone-marrow is irritated by metastatic deposits. These macrocytic anaemias are differentiated from the true megalocytic anaemias on three main grounds: (1) the finding of the aetiological factor; (2) by full examination of the blood picture, which differs in important details in regard to red cells, white cells, and platelets; and (3) by their failure to respond to the ingestion or the injection of the specific anti-anaemic factor, and by their response to appropriate treatment (splenectomy, *x* rays, etc.).

It is hoped that the preceding remarks make it clear that all megalocytic anaemias are macrocytic but that all macrocytic anaemias are not megalocytic. This paper will be restricted to the treatment of pernicious anaemia and other megalocytic anaemias.

Classification of the Megalocytic Anaemias

It is obvious that a deficiency of the specific anti-anaemic factor may arise in one of three ways: (A) by a failure in its manufacture in the stomach; (B) by defective absorption; and (C) by ineffective storage, mobilization, or utilization. On this basis a simple classification of the megalocytic anaemias can be produced.

Under (A) are included: (1) Addisonian pernicious anaemia and the pernicious anaemia of pregnancy. In the former the loss of the specific gastric enzyme is permanent, while in the latter it is temporary. (2) The megalocytic anaemias which result occasionally from extensive resection of the stomach or its widespread destruction by cancer. (3) The tropical macrocytic anaemias of Indian women (Wills), which arise from nutritional deficiency and not from a failure of gastric secretion.

Under (B) is included the megalocytic anaemia which occurs in many cases of tropical and non-tropical sprue, and in some cases of pellagra. In certain instances dietary deficiency and impairment of gastric secretion are factors to be considered in addition to a failure in absorption. Occasionally absorption is so seriously affected in individuals suffering from intestinal stenosis, from multiple anastomoses, and from prolonged diarrhoea as to result in a megalocytic anaemia.

Under (C) are included cases of severe liver diseases, particularly cirrhosis, in a proportion of which, estimated by various authors at from 5 to 25 per cent., a megalocytic anaemia occurs. In some of these cases cell-volume measurements show that this is really a false macrocytosis, due to a flattening of the cells produced mechanically during the spreading of the blood film. It is suggested that the physical state of the plasma in cirrhosis conduces to this effect. In other cases, however, cell-volume measurements are in agreement with cell-diameter measurements, and it is presumed that the damage to the liver prevents it from functioning efficiently as a storage organ for the specific anti-anaemic factor, thus allowing a megaloblastic blood picture to occur. In such cases the administration of the specific anti-anaemic factor, by mouth or by injection, will cure the anaemia but will not alter the underlying disease of the liver. Lastly, it has been suggested that a failure in the mobilization or utilization of the specific anti-anaemic factor arises occasionally, since in certain cases of megalocytic anaemia production and storage of the active principle has been shown to be satisfactory and yet the bone-marrow fails to respond to the naturally produced factor or to its parenteral administration. Before this group of megalocytic anaemias, called by Wilkinson the "achrestic" anaemias, can be finally accepted and its clear demarcation from partial aplasia of the bone-marrow be fully distinguished, further studies of the bone-marrow are required.

The value of such a classification lies in the fact that all cases of megalocytic anaemia falling under (A) and (B), and some under (C), are examples of anaemias due to a specific deficiency, and as such can confidently be expected to be relieved by supplying the missing factor. Since Addisonian pernicious anaemia is the most common and the most important of the megalocytic anaemias, it will be used as the therapeutic example on which treatment of all the megalocytic anaemias can be modelled, with minor modification.

Necessity for Accurate Diagnosis

It might appear unnecessary to emphasize the fact that treatment should be preceded by adequate diagnosis. Those of us who are accustomed to seeing large

numbers of cases of anaemia realize only too well that the technical difficulties which the majority of doctors experience in making a blood examination frequently result in treatment being instituted without this essential diagnostic procedure being undertaken. In consequence, there are large numbers of persons taking liver extract who require either no anti-anaemic remedy or only a simple iron preparation ; and, vice versa, there are other individuals who reach hospital desperately ill in the severe relapse stage of pernicious anaemia, or crippled with advanced neurological disease, who have been taking iron pills for months or have received no treatment at all owing to wrong diagnosis. The last three cases of pernicious anaemia with a blood count of one million red cells or less seen by the writer had been diagnosed as inoperable cancer of the stomach ; no blood examinations had been made and hence no treatment instituted.

The treatment of the anaemias with a " shot-gun " prescription of iron and liver extract, without full investigation, is becoming increasingly common, based on the presumption that one or other of these constituents must be required. If the patient's blood condition fails to respond serious organic disease is generally responsible and a fatal delay in diagnosis may result. If the patient improves the diagnostic criteria obtained from blood examination will disappear, and after a few weeks the doctor will not be able to know which of the substances should be continued for maintenance purposes. For the adequate control of treatment regular blood examinations are essential because of the great variation which occurs not only in the potency of different anti-anaemic preparations available, but also in the individual's response to treatment. As much as five to ten times the amount of liver extract may be required in one case compared with another apparently similar in regard to age, blood level, and the absence of inhibiting factors such as arteriosclerosis or infection. Lastly, for estimating the amount and the frequency of dosage needed for the maintenance of a normal blood level no alternative to regular blood examinations is available. If these facts are accepted it is obvious that so long as such procedures are beyond the scope of the majority of the practising members of the profession, central blood clinics must be established in suitable localities for the benefit of both doctors and patients alike.

Objects of Treatment

The aim of treatment is (1) to restore the blood picture, qualitatively and quantitatively, to normal as quickly as possible ; (2) to maintain a normal blood level ; and (3) to replenish and stock adequately the depots of the body with the factors necessary for blood formation. Minot has rightly pointed out that the individual who receives only just enough of a nutritional factor, such as a vitamin or a mineral, to maintain health may be precipitated into the zone of partial deficiency with the advent of infection : hence the importance of adequate reserves.

It would appear advisable to consider the treatment of pernicious anaemia according to the stage of the disease present when the patient is first seen.

The Severe Relapse Stage

The patient is critically ill and in a collapsed state, with a blood count of approximately one million red cells and a haemoglobin content of 20 to 30 per cent. Before 1926 patients were frequently seen in this terminal stage, but to-day there can be no possible excuse for allowing such a state to develop. The question of blood transfusion immediately arises : the clinical state of the patient, as judged by the degree of circulatory failure rather than by the blood level present, must be the deciding factor. If the blood pressure is very low (diastolic pressure of 55 mm. Hg or less), the pulse fast (120 or more), the heart dilated, dyspnoea present at rest, and oedema severe, it may be decided that the delay of four or five days which must elapse before improvement can occur as a result of treatment entails a risk to life which cannot be taken. In which case a blood transfusion should be given at once.

Blood Transfusion.—One pint of blood from a suitable donor should be run into the recipient's vein, very slowly in order to avoid a reaction which the weakened system may be unable to tolerate. At least half an hour should be taken for the transfusion of blood. Five c.cm. of a liver extract specially prepared for intravenous injection (hepatex P.A.F.) should be added to the blood, and 5 c.cm. of an extract suitable for intramuscular injection should be injected into the gluteal region (campolon, hepastab, pernaemon forte, Lilly, etc.). In less urgent cases, in which some doubt exists regarding the need for immediate transfusion, a suitable donor should be procured and arrangements made to keep in touch with him should an emergency arise. The intramuscular injection of 5 c.cm. of liver extract should be continued daily for three or four days, by which time the reticulocyte increase will have started and a marked subjective improvement will be noted. Within ten days the blood count should have risen by nearly one million red cells, and the patient should be out of all danger.

Iron.—Iron and ammonium citrate, 30 grains three times a day, or one tablet of ferrous sulphate (Glaxo) or ferrous carbonate (Oppenheimer's bipalatinoids 501A), twice or three times a day after food, should be started after the first week and continued for two months, in all cases receiving treatment by the parenteral route, since an iron shortage is apt to arise owing to the exceedingly rapid production of erythrocytes.

Diet.—For the first week a light fever diet should be given, owing to the impairment of gastric digestion.

Drugs.—Hydrochloric acid, combined with glycerin of pepsin, according to the following prescription, is of value if dyspepsia or diarrhoea is present.

℞ Acid. hydrochlor. dil. ... ... ʒ ij
Glycerin. pepsin. ... ... ʒ iv
One to three teaspoonfuls to be added to a large tumbler of water flavoured with orange juice and sipped during meals.

It should be pointed out that the most efficacious treatment for all the symptoms of pernicious anaemia, and for the prevention of such serious complications as spinal cord degeneration and gall-bladder inflammation, is the adequate administration of the anti-anaemic factor. Dyspepsia, diarrhoea, sore tongue, and general weakness all rapidly disappear in the majority of cases without any symptomatic treatment.

Stage of Moderate Relapse

The patient complains of weakness, palpitation, exhaustion, dyspepsia, and dyspnoea on effort, but there is no danger to life. The blood count may be from 1½ to 2½ million red cells and the haemoglobin 40 to 60 per cent. In such a case a choice must be made between parenteral and oral treatment.

PARENTERAL TREATMENT

An intramuscular injection of 5 c.cm. of a liver extract should be given on three or four consecutive days deeply into the gluteal region, alternating daily from side to side. Following the injection firm massage should be applied at the site of injection for a few minutes. By this means subsequent pain and stiffness are greatly reduced. Thereafter a weekly injection of 5 c.cm. must be given until the blood count is normal. It not infrequently happens that the blood level tends to become stationary around 3½ to 4 million red cells and 80 to 85 per cent. haemoglobin and the patient looks and feels

perfectly well. It is essential to restore the blood level completely to normal (5 million red cells and 100 per cent. haemoglobin), as this is an important factor in preventing degenerative changes in the spinal cord. It may be necessary to double or treble the number of weekly injections before normality is obtained.

No special diet is required. The patient should take a plentiful, well-balanced mixed dietary, containing red meat and green vegetables in at least one meal a day. Drugs: iron and hydrochloric acid as already indicated.

ORAL TREATMENT

Liver extract by mouth was the treatment of choice till about three years ago. The extract from 500 grams of liver daily is generally needed to obtain the maximal regeneration of blood. As the cost of treatment works out at from 20s. to 30s. weekly, compared with approximately 2s. 6d. to 3s. when parenteral treatment is given, liver extract by mouth can no longer be recommended, for economic reasons. In addition, in resistant cases and in those in whom absorption is poor, oral treatment does not compare with parenteral, on the grounds of efficiency. Half a pound daily of lightly cooked liver is the average dose required if liver is taken in the crude state. Since the specific anti-anaemic factor is moderately heat-stable there is no point in prescribing raw liver. There are several reasons why the ingestion of liver cannot be recommended as the treatment of choice: first, there is an ever-increasing difficulty in obtaining regular and adequate supplies; secondly, the cost of liver has risen very greatly; and, thirdly, many persons fail to continue to take the requisite amount required to attain and maintain a normal blood level, owing to the nausea and disgust engendered by the constant sight, taste, and smell of the article.

Hog's Stomach Preparations.—These preparations are insoluble and contain the gastric enzyme, which is thermolabile; hence they must not be heated. Excellent results can be obtained from the use of such preparations as ventriculin, pepsac, ektomak, etc., in doses of a tablespoonful three times a day, in water, milk, orange juice, etc. English preparations, such as pepsac, are cheap (8s. 6d. a pound), but they have an unpleasant taste and smell, which can be improved by exposing the next day's ration in a saucer to the air for twelve hours.

GENERAL AND PRE-OPERATIVE MEASURES

Patients should be kept in bed until the haemoglobin has reached approximately 60 per cent. Chronic focal sepsis (tonsils, teeth, or accessory sinuses) should not be treated radically until there has been an adequate response to specific anti-anaemic therapy. On the other hand, localized and easily accessible collections of pus should be evacuated, since they tend to inhibit or retard the therapeutic response.

Should an emergency arise during the relapse stage of pernicious anaemia, requiring an operation which cannot be delayed, intensive parenteral treatment should be undertaken immediately (10 c.cm. of liver extract intramuscularly, repeated in six hours), and a suitable donor should be procured in order that blood transfusion can be immediately given if required. Patients in the remission stage of pernicious anaemia, particularly if they show signs of neurological disease, should receive double or treble the usual quantity of liver extract for a few days before undergoing any major operation, since the blood level tends to fall and neurological degeneration to progress, after serious surgical procedures.

Maintenance Treatment

The amount of material required to maintain a normal blood level varies greatly in different individuals, often for no apparent reason. Only by trial, checked by blood examination, can the problem of dosage be satisfactorily settled. In parenteral treatment the necessary number of intramuscular injections of 5 c.cm. of liver extract varies in different individuals from one a week to one every six weeks. In my experience, 5 c.cm. of campolon, given once every two or three weeks, is an average dose. Iron is not required if it has been prescribed during the first two months of treatment. Hydrochloric acid and pepsin are necessary only for the purposes already mentioned. An ordinary mixed diet is all that is required. The maintenance dose of liver and hog's stomach preparations is also extremely variable in different individuals: on the average, it may be said to be two pounds of liver or four ounces of dried hog's stomach preparation weekly.

The depot storage method of treatment, whereby 5 to 10 c.cm. of a liver extract is injected intramuscularly on two consecutive days, is of value to patients proceeding on holiday or on business to places where facilities for treatment are not available. By this method a satisfactory blood level may be maintained over periods up to two months.

In my experience parenteral treatment is the method of choice at all stages of the disease, on the grounds both of efficiency and of economy. Should the patient object to injections, however, cooked liver and hog's stomach preparations on alternate days, in the doses mentioned above, should be advised, as by this means the distaste engendered by both articles, if continuously taken over long periods, is reduced.

MEGALOCYTIC ANAEMIAS OTHER THAN ADDISONIAN ANAEMIA

The scheme of treatment outlined above is satisfactory for the treatment of the anaemia present in the other conditions mentioned, with the following modifications.

PERNICIOUS ANAEMIA OF PREGNANCY

In the majority of cases treatment can be discontinued after parturition.

TROPICAL AND NON-TROPICAL SPRUE AND PELLAGRA

In the above conditions multiple deficiencies are present which must be corrected. In addition to supplying the anti-anaemic factor, the deficiency of vitamins and minerals must be repaired by the administration of marmite (one teaspoonful in water or in a bread-and-butter sandwich thrice daily); radiostoleum or adexolin (5 minims thrice daily); calcium (calcium lactate, 30 grains thrice daily); and iron (as above). For the control of the fatty diarrhoea restriction of fatty foods, especially cream, butter, milk, bacon, and fatty meat, must be made. A high intake of Grade A protein—for example, liver and butcher's meat—is recommended, while starchy food should be taken in small quantities only. For details the reader is referred to the literature dealing with the dietary problems in the above deficiency diseases. When the condition has been cured by diet and anti-anaemic treatment the maintenance dose of the specific anti-anaemic factor may be steadily reduced, many cases being able thereafter to maintain a normal blood level by diet alone.

With regard to the megalocytic anaemias occurring in cases of severe liver disease, the results of anti-anaemic treatment are less satisfactory, since prognosis depends on the degree and progress of liver damage. Lastly, in the so-called "achrestic" and semi-aplastic anaemias with a megalocytic blood picture the response of the formative tissues to the treatment outlined above is absent or very poor. Repeated blood transfusions can, however, maintain the patient alive, but in a poor state of health, for long periods.

BRITISH CONGRESS OF OBSTETRICS AND GYNAECOLOGY

THE PROCEEDINGS IN BELFAST

[FROM A CORRESPONDENT]

The tenth British Congress of Obstetrics and Gynaecology was held in Belfast from April 1st to 3rd under the presidency of Professor R. J. JOHNSTONE. The invited guests were Dr. James Heyman of the Radiumhemmet, Stockholm, and Dr. G. Gray Ward of the Women's Hospital, New York. The main subject which had been chosen for consideration was the conservative treatment of the pelvic organs.

Before the discussions were begun the Congress rose in tribute to the memory of the late Professor Blair-Bell, who had been more closely associated with these meetings than any other man, and who had, moreover, been one of the founders of the British College of Obstetricians and Gynaecologists, and its first president.

Conservative Treatment of the Pelvic Organs

Professor J. HENDRY read the opening paper, on the results of conservative treatment of the ovaries. His two main conclusions were that modern abdominal surgery would not be in its present position were it not for the fact that the pioneers of the operation of ovariotomy had persisted in spite of a 25 per cent. mortality rate; and that the conservation of even the smallest amount of ovarian tissue not only conduced to the health and well-being of the patient, but might maintain her fertility. Dr. BETHEL SOLOMONS discussed the conservation of the Fallopian tubes, with especial regard to the treatment of sterility. He confessed that his results, like those of others, were disappointing, but felt that such results should spur gynaecologists on to further endeavour rather than discourage them into passivity.

The Liverpool school was responsible for the papers dealing with the uterus, Professor LEYLAND ROBINSON considering the organ from the historical and racial standpoint, Mr. GEMMELL reporting the results of myomectomy, and Dr. HERD the results of the conservative treatment of endocervicitis. The subsequent discussion was rather apathetic, probably because the opening speakers had accurately represented the views of gynaecologists, views in sharp contradistinction to the practice of the general surgeon who trespasses outside his own domain. Dr. O'DONEL BROWNE gave an account of the results he had obtained in rabbits from various procedures and operations on the Fallopian tubes. His results were not calculated to encourage operations for sterility, and in particular he objected to the practice of threading the Fallopian tubes with catgut—a procedure popularized by the Dublin school. The only other diversity of opinion found expression in the discussion of the merits of total as opposed to subtotal hysterectomy, and in the question whether the ovaries, or some ovarian tissue, should be conserved when hysterectomy was performed. Candidates for the M.C.O.G. were provided with the obiter dicta of eminent gynaecologists for and against both procedures.

Carcinoma of the Cervix and Uterus

At the end of the afternoon session of the first day Dr. HEYMAN succeeded in making examiners in gynaecology submit to examination. The appropriate committee of the League of Nations has suggested the classification of carcinoma of the cervix into four main stages with a view to assessing the results of treatment. Dr. Heyman has long considered such classification to be impossible, but British gynaecologists have remained the stoutest champions of the system. Lantern slides illustrating the degrees of extension of the cancerous growth occurring in patients attending Dr. Heyman's clinic were shown, and the members were invited to classify them into one or other of four main groups. The event proved that British gynaecologists have not forgotten the gentle art of cribbing. Dr. Heyman proposes to put the French gynaecologists to the same test, and there seems little doubt that his contention will be triumphantly vindicated.

On April 2nd Dr. HEYMAN read a paper giving the results of treatment of carcinoma of the body of the uterus by radium, using a new and ingenious method of applying the element. His results are surprisingly good, but do not as yet warrant the supersession of surgical extirpation of the uterus in inoperable cases. He does not subscribe to the view that the adenocarcinomatous cells are more resistant to radium than the malignant squamous cells, but is of the opinion that his idea has arisen because of the technical difficulties involved in the application of the radium to the body of the uterus, particularly when it is bulky. He was followed by Professor GILBERT I. STRACHAN, who recorded two cases of carcinoma following radiotherapy for benign lesions, but concluded that the malignancy was not to be attributed to the radium. Dr. MARTINDALE reported the results of the treatment of uterine haemorrhage by irradiation with radium and x rays, and was in agreement with Professor Strachan that there was no evidence that malignancy was caused by this treatment. It is, however, significant that out of 270 cases so treated no fewer than four patients subsequently developed malignant growths in the uterus.

In the afternoon session Dr. GRAY WARD read a paper on the evaluation of the principles of reconstructive pelvic surgery. In the view of many it was a pity that this distinguished gynaecologist from America had not been asked to discuss a more living and urgent problem, for it may truly be said that, thanks to the work of British gynaecologists, this procedure is stabilized.

Hormone Therapy

Dr. KAUFMANN of Berlin read a paper on the clinical uses of the female sex hormones, and he took the opportunity of correcting his earlier and over-optimistic statements concerning the treatment of primary and secondary amenorrhoea. Both he and Dr. JEFFCOATE were in agreement that very little could be done by hormone therapy in the treatment of these conditions. This pessimism, however, was to a great extent counteracted by the brilliant results obtained with oestrin in the treatment of menopausal conditions, particularly those affecting the skin. Unfortunately the time for discussion of these two papers was very limited, and Dr. Bishop and Professor Dodds were allowed but little time to make their remarks. Dr. BISHOP agreed with the openers, but Professor DODDS thought that the hormones would produce their results when the gynaecologists learned how to use them.

Other Matters

On the final morning three papers were read and two films were shown. Dr. LEONARD COLEBROOK gave a paper on the prevention of puerperal sepsis. Dr. H. R. MACLENNAN then read a very interesting paper on the distribution of contracted pelvis in Scotland. The final paper was read by Dr. G. W. THEOBALD, on the relationship of pregnancy to chronic nephritis and hypertension. The films shown were: the development of the female genital organs, by Dr. MACCONNAILL; and the action of ergometrine, by Dr. C. MOIR.

In the afternoon members of the congress had the opportunity of seeing operations performed in the various hospitals in Belfast. The only criticism of the congress was that the programme was too crowded, and it is hoped that this will be obviated in future. The practice of choosing the main topic three years in advance of the congress is perhaps open to question, for, at all events in Belfast, those papers which had no bearing on the main subject provoked the most interest and discussion.

The annual general meeting of the College of Obstetricians and Gynaecologists was held on Thursday afternoon, when several Fellows and Members were admitted. The PRESIDENT, in his address, stressed the truly remarkable growth of the College, and remarked that it numbered amongst its Fellows the leading obstetricians in every corner of the Empire.

Social Activities

Important as were the papers read, it will be generally admitted that a congress is made or marred by the social atmosphere in which it is enveloped. Whatever may be the differences which divide North and South, Ireland epitomizes hospitality, and the post-prandial oratory must be heard to be believed. The British Medical Association is fortunate that next year's Annual Meeting is to be held in Belfast. Lunch and tea were provided on the first day by the local Congress Committee, on the second day a lunch was given by the University of Belfast, the Vice-Chancellor presiding and welcoming the members. The president and Mrs. Johnstone entertained the members of the congress and their friends to a reception in the Great Hall of the University on the second evening. The Congress Dinner, held on the second evening, was excellent, and the speeches scintillated with wit. Reference must be made to the charming, modest, and witty speeches of the two secretaries, Mr. C. H. G. Macafee and Dr. F. M. B. Allen, who had worked so hard to make the congress the success it undoubtedly was.

Over 180 members signed the roll, and in the opinion of those best qualified to judge this was in every way the best congress of the series. Subsequent perusal of the papers read will show that British obstetrics and gynaecology is in a more healthy and vigorous state than it has been for more than one decade, and this renaissance must be attributed in some measure to the formation of the British College of Obstetricians and Gynaecologists. It is to be hoped that on mature reflection the societies concerned will be driven to the conclusion that these congresses are too important not to be held at least biennially.

PROGRESS OF PHYSICAL MEDICINE

A luncheon was given at the Langham Hotel on April 8th at which Lord Horder, who was in the chair, addressed the company, numbering nearly one hundred, on the progress of physical medicine, with special reference to the sixth International Congress to be held in London from May 12th to 16th. Among those supporting the chairman were Sir Francis Fremantle, M.P., Dr. Alfred Cox, Sir Henry Gauvain, Sir Robert Stanton Woods, Sir William Willcox, Sir Morton Smart, Dr. R. Fortescue Fox, Dr. W. J. Turrell, and Dr. Frank Howitt.

A presentation of a wrist watch was made to Dr. R. King Brown (together with a handbag to Mrs. King Brown), subscribed by many friends "as a tribute to his services in the science and practice of physical medicine." In making the presentation Lord Horder said that Dr. King Brown, formerly medical officer of health for Bermondsey, had done ten years of arduous work in this field. He had been responsible on the medical side for the editorship of the *Journal of Physical Medicine*, had written a great deal on the subject, and had translated two classics: Bernhard's *Sunlight in Surgery*, and Schliephake's *Short Wave Therapy*. He was recognized as a good colleague and a man of sound judgement by all who had worked with him.

The Forthcoming International Congress

Lord Horder proceeded to say a few words about the forthcoming International Congress. The programme, he said, was somewhat ambitious, yet such was the repute of the foreign and home contributors to the discussions that very little fear need be entertained as to the result. Great help had been afforded by the Foreign Office, which had itself sent out the invitations to the official delegates who were to visit England. Thirty-five countries had been invited to send representatives, and up to date thirty had accepted. The congress also had the sympathy of the Ministry of Health. The British Executive Committee had worked indefatigably at this its first experience of congress affairs. Lord Horder said that he himself had the privilege of being honorary president, but by an unfortunate mischance he would be unable to be present at the meetings. Before the exact date of the congress was settled he had arranged to attend the meeting of the American Medical Association in Kansas City and to lecture in New York and Boston. He was anxious to make this clear lest from his absence it should be thought that he was indifferent. He had never been indifferent to the claims of physical medicine, having advocated them in season and out of season, and he believed the congress would stimulate new interest in this growing branch of preventive and curative medicine.

Pitfalls in Physical Medicine

There was an idea in some quarters, Lord Horder continued, that physical medicine was a new departure, whereas, of course, it was the oldest of therapeutic efforts. When Adam delved he was keeping himself fit, though when Eve span it might be said that she also was contributing to preventive medicine by making an effort towards equanimity. But it was only during recent years that the various methods of physical medicine had been brought under that scientific control which was essential to the proper exploitation of any method designed for the patient's interest. Such a wealth of methods and apparatus was available in this field that one almost hoped no more would be forthcoming for a time, in order to allow of a breathing space to try out the methods already to hand.

The achievements of physical medicine had been considerable, its potentialities were incalculable, but of course there were pitfalls. The method must not be applied indiscriminately to all sorts of diseases. With the public's childlike love for machinery the temptation so to apply it was very great. There was also a danger lest physiotherapists should not keep closely enough in touch with the physicist on one side and the clinician on the other. To a considerable extent the physiotherapist at his or her best must be both physicist and clinician. But the physiotherapist must look for support, if not for guidance, to the pure physicist and to the pure clinician, taking his problems first to the one and then to the other for discussion and criticism. Just as the physiotherapist had much to teach the rest of medicine, so he had much to learn from it, and he must constantly remember that there was no end to learning. There was also a danger lest he wander away from the bedrock of pathology and lose himself in a sea of speculation, or construct his own pathology, a more fatal error, because a specially constructed pathology within a group of medicine could only be at long last a pseudopathology. Lastly there was the peculiar danger that his efforts might be cramped by an attempt at commercialism on the part of astute business men.

These pitfalls could be avoided by several safeguards: first, the mental integrity of the practitioner himself, also his colleagueship and all that that implied, the group spirit, which was an essential factor in securing advance along the best lines, and the provision of opportunities for free discussion and criticism and dissemination of knowledge and technique. If it were said that such safeguards were all of them things of the spirit rather than material things, then, without being sententious, he would remind them that real safeguards were always and only of that kind. It was because he believed the approaching congress would help to establish these ideals that he heartily welcomed it.

The Adelaide correspondent of the *Times* announces that the South Australian Government has appointed Dr. E. Weston Hurst to be director of the Institute of Medical Science, in the establishment of which the State Government and the University of Adelaide are collaborating. Dr. Hurst graduated M.B., Ch.B. of the University of Birmingham in 1922, M.D. in 1924, and D.Sc. in pathology in 1932, in which year he obtained the M.R.C.P. He is a member of the research staff of the Lister Institute and Reader in Experimental Pathology in the University of London.

SOME FEATURES OF MALIGNANCY

LISTER LECTURE BY SIR ROBERT MUIR

At the Royal College of Surgeons of England on April 7th, in the week of the 109th anniversary of Lister's birth, the Lister Memorial Lecture was delivered by Sir Robert Muir, F.R.S., professor of pathology, University of Glasgow, and the recipient for 1936 of the Lister medal, which is awarded triennially by the College. Sir Robert Muir chose for his subject "Malignancy, with Illustrations from the Pathology of the Mamma." He began with a reference to the breaking of precedent which admitted to the high honour of the Lister award one who was not himself a surgeon. He came before them, he said, as a "layman," with a layman's disabilities, but he knew that the desire of those who made the award was to emphasize that pathology and bacteriology were the essential basis of Lister's work in surgery. He referred in some detail to the scientific achievements of the earlier part of Lister's life before his epoch-making contributions to surgery were forthcoming. By the time he reached Glasgow, at the age of 33, Lister had published more than a dozen papers on histological, physiological, and pathological subjects, several of them being historical landmarks.

Character and Distribution of Malignancy

Sir Robert Muir said that he proposed to speak on the present knowledge of the characters and aetiology of malignancy as the result of experiment, to give illustrations from his own observations on malignant disease of the mamma, and finally to consider the essential nature of malignancy. In a general way malignancy might be regarded as an abnormal behaviour of cells, consisting essentially in uncontrolled growth; but the proliferation must not be regarded as all-powerful. Experimental work on transplantation of tumours showed that the margin between growth and non-growth was comparatively narrow, and there were numerous examples in the human subject of malignant cells being overcome and disappearing locally. The actual malignancy was in fact the surplus malignancy against tissue resistance. On the other hand, there was no satisfactory evidence that weakened resistance of connective tissue would in itself lead to malignancy in the related epithelium. A malignant character once acquired seemed to be a permanent property of the cells; the cells might be destroyed or die out, but they did not, so far as was known, regain a normal behaviour. The biological properties of the cells appeared to undergo an essential alteration which was transmitted to their descendants.

As for the distribution of malignancy in the human body, recent investigation had not only revealed the wonderful variations in the structure of tumours but also the multiplicity of cells from which they arose. It was justifiable to say that malignancy might appear in any cell of the body if the cell had the power of normal proliferation. Tumours, malignant as well as simple, arose not only from the tissues most active in repair, but also, though less frequently, from specialized cells, such as those of the liver. On the other hand, adult nerve cells had lost the power of proliferation, and no tumour arose from them, though a growth might originate from their progenitors, the neuroblasts, often possessing highly malignant properties. Malignancy became more frequent as age increased, but malignant growths were met with in infancy, and there was clear evidence that they might originate during intrauterine life. Sarcomata of bone, too, were markedly related to the growth period.

Aetiological Factors

Looking back on the last twenty-five years of research, Sir Robert Muir continued, one could not but be impressed by the advance in knowledge of the different ways in which tumours might be initiated. Chronic irritation was the first factor to be considered; then came the recognition, still from the clinical side, that a number of so-called irritants, strikingly different in their nature, were specially liable to cause malignant change. The matter was clinched by experimental work on carcinogenic agents, and the lecturer mentioned a number of researches by different investigators in this connexion. He summarized the results which had been reached as follows:

1. By both experimental and observational methods it is shown that malignant growths may be produced by the prolonged action of irritants and cell stimulants. Such growths chiefly affect tissues active in repair.

2. There are malignant growths of the more specialized epithelial tissues and of some connective tissues which have not yet been produced experimentally, but pathological observations in the human subject indicate that they may arise on the same principles.

3. There are malignant growths which can be placed in neither of these two classes. We know nothing as to the conditions incidental to their occurrence, and can hardly even speculate as to their causation. Such are the malignant growths arising from embryonic cells, sometimes multipotent; those of the leucocyte-forming tissue; also a great variety of tumours in connexion with the central nervous system, endocrine glands, etc. The methods of experimental embryology may throw light on some of these.

As to whether there was any one general principle concerned in the initiation of malignant growth, he thought the nearest approach to a general statement which could be made was that the acquisition of malignancy was related to previous non-neoplastic proliferation. The occurrence of a long latent or silent period between the initial stimulus and the malignant growth was the rule, but there were exceptions, as in malignant growths appearing shortly after birth.

The conditions which might lead to repeated or continuous cellular proliferation in pathological states were of three kinds:

(*a*) Chronic irritation. This term must be used in its widest sense. There were cases of carcinoma following long-continued reactive proliferation where nothing was known of the nature of the irritant. Carcinoma of the cervix uteri might be mentioned in illustration.

(*b*) A sequel to compensatory hyperplasia. The importance of this was that specialized cells proliferated. A noteworthy example was to be met with in the liver. Probably no other organ responded so readily to loss of its substance by compensatory growth.

(*c*) A sequel to proliferation produced by hormones.

Malignancy in the Mamma

This last point brought the lecturer to the new field of inquiry which had been opened up by the work done on malignant growths in the breast. The development of malignancy had been studied in breasts the seat of manifest cystic disease, in those with various conditions of local hyperplasia and fibrosis with little or no cyst formation, and also in those in which actual carcinoma was present. As a result of such study one became convinced that there were a whole series of structural changes, presenting infinite variety as regards detail, which affected the mammary epithelium and led up to malignancy. In the most general terms these were: (1) increased and altered secretion accompanied by changes in type of epithelium and by desquamation of cells, and (2) hyperplastic proliferation of the epithelium. The hyperplasia of the epithelium was attended for a long time by a co-ordinated increase of connective tissue—a condition still removed from malignancy. Thus there arose papillomatous growths in the ducts, and these were often present in an early stage in association with cystic dilatation. The next stage was a relative overgrowth of epithelium in comparison with stroma, epithelial outgrowths being produced containing only a small amount of connective tissue. This condition passed on gradually to a stage where there was proliferation of epithelium alone, and large cellular masses without any stroma were found in the ducts. Finally, the anaplasia became distinct; the cells and their nuclei varied in size, the latter becoming of

the vesicular type with distinct nucleoli, the amount and arrangement of chromatin varied, and ultimately there appeared within the ducts cellular masses which had all the characters of an encephaloid carcinoma. The term "intraduct carcinoma" might then be applied, for the cells might be regarded as malignant although they had not yet passed into the tissue spaces.

Intraduct carcinoma was often said to be rare; its occurrence as a widespread condition was certainly uncommon, but local intraduct carcinoma was, in the lecturer's experience, quite common. He believed that intraduct carcinoma, with or without a growth of malignant cells within the acini over a considerable area, represented a condition in which the cells had acquired the characters of malignancy, yet were still within normal bounds—"a sort of tissue culture of malignant cells still within the test tube." Ultimately, perhaps after years, the natural consequence was a break through the normal confines, with an ordinary infiltrating carcinoma as the result.

Why did the cells not break through at once? Clearly there was a balance between tissue resistance and malignancy over a long period. It was not strange that intraduct carcinoma might exist for years before infiltration occurred when it was remembered that many years might also elapse before recurrence took place after operation. The struggle between malignant cells and normal tissues had often been observed and was of two main types. The presence of malignant cells within ducts might give rise to reaction of the connective tissue within the elastica, the tissue often undergoing a laminated thickening diminishing the lumen and gradually strangulating the cancer cells as it progressed. Again, there might occur a marked cellular reaction around the affected ducts and acini, the cells being chiefly plasma cells and lymphocytes, and these at places might penetrate the walls of the ducts, causing the elastic tissue to disappear, and invading the cancer cells, so leading to their atrophy. But such processes of healing were, of course, effective only here and there, and the disease as a whole was progressive.

The Cancer Cell as a Parasite

The parasite-like behaviour of the cancer cell was only a descriptive term, without reference to the ultimate nature of malignancy. The distribution of the malignant changes within the ducts depended in part on multiplicity of foci, and in part on the manner of spread, the latter including the intra-epithelial route. Briefly, once the cells had assumed malignant properties they might infiltrate the lining epithelium and grow within it, the malignant cells behaving like parasites and the epithelium playing a passive role. The epithelial cells invaded were in fact compressed by the malignant cells, though they might be recognizable for some time by their flattened and atrophied nuclei. Large oval malignant cells with characteristic nuclei might be seen growing here and there, or forming a continuous sheet of cells covered by a persisting layer of the original epithelium. The lecturer had traced this mode of epithelial growth at all stages and in all parts of the mammary tissue. He had seen it within acini, in the small and large ducts, in the ampullae and in the large ducts of the nipple. It was most often in this last situation, possibly because the epithelium there had a purely lining function to the pathways and presented more resistance to the spread. He had seen isolated malignant cells confined to the epithelium at the orifices of the ducts where the cells first arrived at the epidermis. Spread then occurred in the latter, producing the Paget lesion. The parasite-like behaviour of the malignant cell was brought out in a striking manner in these conditions and situations.

The lecturer went on to discuss the relation between cystic disease and carcinoma. On studying histologically breasts in which cancer had already developed and searching for evidence of pre-cancerous changes, his experience had been that it was the rule to find epithelial hyperplasia on the basis of which malignancy had developed. The epithelial growth was often associated with cysts, but these might be of microscopic character or not recognizable as such during life. Malignancy might develop in connexion with large cysts, but epithelial hyperplasia was the all-important factor, and although cysts and hyperplasia might coexist sometimes in striking fashion, he thought the two types of lesion were often in inverse proportion to one another.

To interpret such changes as the usual precursor of malignancy agreed with what was known of malignant disease elsewhere, and especially with the results of experimental work on carcinogenesis. In the complete absence of evidence that the changes were of inflammatory nature produced by some outside agency, it was natural to regard them as the result of endocrine disturbance, and the lecturer went on to refer briefly to what had been established in this connexion, mentioning the researches of a number of workers on the effect of oestrone in producing essential changes in the mammary tissue of mice, proliferation being followed by malignancy. It did not follow from such experiments that the changes in the human breast were the result of oestrone in excess. It was known that lutein also was concerned in the mammary changes associated with menstruation and pregnancy. Nevertheless, the observed facts gave strong support to the view that cystic hyperplasia was the result of disordered endocrine balance of a very delicate kind.

Essential Nature of Malignancy

Many theories had been put forward as to the essential nature or cause of malignancy. The two main theories were: (1) that malignancy was the result of a change in the mechanism of the cell, and (2) that it was produced by the presence of a virus. The change in the cell appeared to be twofold: an escape from the normal growth-controlling agencies of the body, and the appearance of altered characters of the cells which gave the tumour its special structural characters. The parasitic theory had passed through many phases. Various organisms had been suggested—protozoa, bacteria, yeast—but it was now generally recognized that if a parasite was concerned it could only be an invisible micro-organism such as a virus. Here the lecturer recalled the work on fowl sarcoma which was found by Peyton Rous to be transferable by a cell-free filtrate, and the theory put forward by Gye as to the dual nature of the filterable agent. If the filterable agent was a virus, the question arose: Was there one or were there many? If a single virus were supposed, one great difficulty presented itself owing to the fact that the virus produced in the new tumour the features of the tumour from which it came. That a virus should, as it were, carry with it the characters of its environment in the original growth to a normal tissue was a phenomenon of which he knew no parallel. If, on the other hand, there were a multiplicity of viruses or a virus for each tumour, the insuperable theoretical difficulties were only met by Gye's view as to the dual nature.

What was required in this field of inquiry was some method of definitely recognizing a virus. Another all-important question was whether there was a filterable agent in an artificially produced fowl tumour as contrasted with a naturally occurring tumour such as the Rous sarcoma. The domain of viruses as pathogenic agents was gradually being extended by investigation, and some definite tumours had been shown to be caused by them: a recent example was the work by Peyton Rous and Beard (detailed in the *Journal of Experimental Medicine*, 1934, lx) on Shope's infective papilloma of the cotton-tail rabbit in America—a growth undoubtedly caused by a virus. A question which remained unanswered was whether the malignancy of the epithelioma—that is, the uncontrolled proliferation of its cells—depended upon the presence of the virus, or whether the virus produced malignancy as other carcinogenic agents might do, the virus merely persisting in the malignant growth. In other words, if the virus could in some way be removed from the epithelioma, would malignancy persist or come to an end?

The Conflict of Theories

The lecturer thought there was no valid evidence that malignancy in general was produced by a virus or viruses entering the body from outside. Experimental facts appeared to exclude that possibility. Malignant growths could be set up by carcinogenic agents so regularly, not only when applied externally but when introduced into the tissues, that the access of a virus from without on each occasion seemed impossible. The conclusion appeared to be inevitable that if a virus was necessary for malignancy it must be present within the normal tissues in the interior of the body and act only when proliferation had been previously set up by carcinogenic agents or in some other way. It was a hypothesis on which nothing definite could be said. No one could prove or disprove the presence of a virus in normal tissues ready to produce malignancy when occasion offered.

Both theories—that malignancy was the result of a change in the mechanism of the cell, or that it was due to the presence of a virus—had their strong supporters, but a decision was not to be arrived at by the votes of "authorities." On either view there seemed to be a failure on the part of nature. In the one case normal proliferative processes evolved for defence and repair passed into malignancy, in the other the animal body had somehow come to harbour a virus which, given opportunity, led to its destruction.

"The fact that the problem as to the essential nature of malignancy has not been solved has unjustifiably obscured what has actually been achieved. That malignancy may supervene on cellular proliferation brought about in various ways, by irritants, cell stimuli, and hormones, and as a result of compensatory hyperplasia; that in most cases a long period elapses between the onset of proliferation and malignancy; that in the case of chemical substances the tendency to institute malignancy is in certain instances related to molecular structure; that inherited susceptibility plays an important part, especially in certain organs; that the development of malignancy depends in some cases upon congenital abnormalities; and that these factors may be combined in different ways—these are facts which have been completely established. Knowledge of causes brings with it the possible means of prevention, and has already been effective."

Sir Robert Muir concluded on a note of hopefulness. Fresh stimulus had been supplied by recent advances. Much was being learned from a close co-operation between clinical observers and pathologists. Workers in any one field naturally pushed the implication of their results to the full, but all results must be co-ordinated and tested in relation to the fundamental questions. The picture he had tried to present had come chiefly from researches in the last twenty-five years. He had little doubt that in the next quarter of a century it would be greatly changed, and that what he had brought forward in his lecture would be only a record of what had been.

BRITISH EMPIRE CANCER CAMPAIGN

At the fifty-eighth quarterly meeting of the Grand Council of the British Empire Cancer Campaign, held at 12, Grosvenor Crescent, London, on April 6th, a communication was received intimating that His Majesty the King had been graciously pleased to become Patron of the Campaign.

A letter was read from the Dowager Marchioness of Reading accepting the invitation of membership of Grand Council, and invitations to become members were extended to: Lady Barrett, C.H., M.D., M.S. (of the Royal Free Hospital and the Marie Curie Hospital), Sir David Wilkie, Ch.M., F.R.C.S. (a member of the Medical Research Council and professor of surgery, Edinburgh University), Mr. W. Heathcote Williams (to represent the Lancashire, Cheshire, and North Wales council of the Campaign), and Sir James Parr (High Commissioner for New Zealand, to represent the New Zealand Branch).

The following grants, amounting to £5,530 and making a total to date of £30,990 for the year 1936, were approved: £1,100 to the Radium Beam Therapy Research; £1,750 (in addition to the grant of £1,850 already made for the year 1936) to the Mount Vernon Hospital; £500 (in addition to the grant of £600 already made for the year 1936) to the Marie Curie Hospital; £100 and £80 to Dr. C. R. Amies, at the Lister Institute, and P. R. Peacock of Glasgow respectively for the purchase of special types of centrifuges; £1,000 to the Manchester Committee on Cancer to cover the cost for two years of investigations to ascertain whether there is any connexion between the use of heavy oils in motor vehicles and the apparent increase in the incidence of cancer of the upper air passages and the lung; £1,000 to the North of England branch of the Campaign to meet the cost for the second year of the "short-wave" investigations being carried out at Newcastle, on behalf of the Campaign, under the direction of Professor W. E. Curtis and Dr. F. Dickens. In this connexion Grand Council expressed its appreciation of the technical assistance afforded the workers by the technical staff of the Marconi Company.

Approval was given to requests for affiliation to the Campaign from the British Columbia Cancer Foundation at Vancouver, and from the Cancer Committee of the Department of Health of Ontario at Toronto. Notification was received that the Royal Society and the Medical Research Council had nominated Professor Matthew Stewart, F.R.C.P., of Leeds University (a member of the Medical Research Council), to succeed Professor R. T. Leiper as one of their five nominees on the Scientific Advisory Committee.

INTERNATIONAL SOCIETY OF MEDICAL HYDROLOGY

The annual meeting of the International Society of Medical Hydrology, which is open to non-members on payment of a fee of £1, is to be held this year in Austria, from October 10th to 16th.

The opening ceremonies and the first of the two medical discussions will take place in Innsbruck, by kind invitation of the university and of the municipality; the party will then proceed to Badgastein, visiting Hofgastein also, and from there to Salzburg. An optional one-day motor tour of the Salzkammergut follows the meeting, and there will also be optional excursions to Vienna and Budapest, beginning on October 17th.

The two principal subjects for consideration are: "The Spa Treatment of Disorders of Old Age," to be introduced by Sir Humphry Rolleston, followed by Professor Pap (Budapest) and Dr. J. Schneyer (Badgastein); and "Radioactivity in Medicinal Waters," studied in its physical, physiological, and clinical aspects, by Dr. Penkava (Prague), Dr. Gerke (Badgastein), and Drs. Pierret and Stieffel (La Bourboule and Plombières). Supplementary papers may be offered, and there will also be an open session for communications on any hydrological subject.

A party will be formed to travel from London on October 9th. The anticipated costs of participation are, if a party of fifteen can be formed, £10 to £11 return fare to Innsbruck and back from Salzburg, plus the "inclusive charge" of 180 Austrian schillings (about £7 at the present rate of exchange) for travelling, accommodation, board, etc., after arrival at Innsbruck. Fuller particulars may be obtained from the General Secretary, International Society of Medical Hydrology, 109, Kingsway, London, W.C.2.

We are asked to announce that the Savill Prize, value £15, which is offered biennially by the West End Hospital for Nervous Diseases, will be awarded this year. Candidates, who should be post-graduate students, are required to write a thesis on a neurological subject of their choice, which subject must be submitted for approval not later than May 31st; they must also have attended the practice of the hospital on at least ten occasions. Theses must be received not later than November 30th, and are accepted only on the condition that they will not be published except with the written consent of the examiners. Further particulars may be obtained from the secretary of the hospital, 73, Welbeck Street, W.1.

Scotland

Lunacy in Scotland

The report of the General Board of Control for Scotland for the year 1935 shows that at January 1st, 1936, there were 19,734 insane persons in Scotland, including inmates of training schools for imbecile children who had not been certified under the Mental Deficiency Act and of the criminal lunatic department of Perth prison. This was an increase of forty-nine over the number at January 1st, 1935, and did not include insane persons maintained at home by their natural guardians. Of the total number 2,758 were maintained from private sources, 16,889 from the rates, and eighty-seven at the expense of the State. Mental defectives at January 1st, 1936, numbered 4,414, an increase of 139 over the figure at the beginning of 1935. During the year 2,694 patients were admitted to establishments for mental disease, which was 174 less than the average for the past five years. The number of voluntary patients admitted during 1935 was 855, as compared with 771 for the average of the previous ten years; there were 1,213 such patients resident on January 1st, 1936. Concerning discharges, 141 private patients and 833 pauper patients were discharged as recovered, while 128 private patients and 156 pauper patients were discharged as unrecovered. There were 226 deaths of private patients and 1,108 of pauper patients, these figures being respectively nineteen more and thirty-six fewer than the average figures for the preceding five years. Attention is drawn in the report to some recent methods of treatment. It is pointed out that nearly eighty years have elapsed since the Royal Commission held its inquiry into the care of the insane in Scotland, and that the record since that time has been one of steady development and improvement, at first mainly in conditions of care and comfort, but latterly also in methods of treatment. None of the conditions upon which the Royal Commission in 1857 reported adversely are now to be found in Scottish lunatic asylums, and many features have been introduced, bringing these institutions into line with up-to-date general hospitals. The open-door system and, still more, the modern village system which exists at the Edinburgh District Asylum, Bangour, the Aberdeen District Asylum, Kingseat, and the Renfrew District Asylum at Dykebar, are strikingly progressive in comparison with conditions of eighty years ago. Mental illness, though often associated with physical conditions, differs from bodily illness in that conduct is more or less affected, so that separation from life in the community is usually imperative for a time at least. Yet a feature of the modern asylum is the friendly and homely atmosphere, and the absence of any real evidence of detention. Occupation is now recognized as an important therapeutic agent, and a very large percentage of the patients in every institution work voluntarily under medical supervision. While the sexes are separated in the routine life of the institutions, every possible opportunity is now taken for bringing them together at suitable times, as at dinner, attending divine service, and at entertainments, recreations, and amusements, such association being useful in readjusting the patient's outlook upon, and natural reactions to, social conditions and behaviour. The remarkable results obtained by treatment of general paralysis through induced malaria are mentioned; in a number of cases the disease has been arrested and the patients have been able to return to normal life and vocation. Of the 325 patients treated by induced malaria in Scottish asylums ninety were returned as recovered and thirty-three as relieved. There has been a distressing increase in the number of patients suffering from dementia praecox, there being 3,559 in residence at December 31st, 1935, as against 3,381 at the end of 1934. In one asylum in Scotland interesting results have been obtained in a number of cases by octozone treatment. By this method of oxidation and gaseous disinfection sixty-nine patients have been treated, of whom twenty-eight recovered, eight were improved, and thirty-three were unrecovered. No recovered patient has required further treatment. The method has shown especial promise in the case of patients suffering from melancholia. The report states that a total sum of £932,092 has been paid by local authorities for pauper lunatics. The average weekly charge for these has varied from 21s. 9d. in Royal Asylums to 15s. 1d. in private dwellings. The report may be obtained at H.M. Stationery Office, 120, George Street, Edinburgh, price 1s. 3d.

Eye Department of Glasgow Western Infirmary

The new ophthalmological department of the Western Infirmary, Glasgow, was formally opened on April 9th. The department, which is to be known as the Tennent Memorial, and which cost some £45,000, was erected from money provided by the trustees of Dr. Gavin Paterson Tennent, who was the first physician appointed to the out-patient department of the Infirmary when it was opened in 1874, and who was a visiting physician for sixteen years. Dr. Tennent directed his trustees to pay to the University of Glasgow a sum sufficient to found a chair of ophthalmology and to provide a suitable building for such purpose in the Western Infirmary. Sir John A. Roxburgh, who presided at the ceremony, said that a series of difficulties had prevented the carrying out of the wishes of Dr. Tennent until the present time. The new department, which had been constructed on the most modern principles, contained on the ground floor waiting rooms, consulting department, laboratories, lecture room, etc., and on the first and second floors there was accommodation for twenty in-patients and an operating theatre, while the building was directly connected with the Western Infirmary. It was intended that the department should be devoted to higher study and research on affections of the eye. Professor T. K. Munro of Glasgow University said that it might be the privilege of the physician in the course of a diagnostic survey to discover something which helped the oculist to understand the nature of what seemed at first to be a purely local affection of the eye. On the other hand, certain cases of headache which gave trouble to the physician might be successfully treated by the ophthalmic surgeon. Thus the physician and the ophthalmologist had much common ground to work upon, and each might render good service to the other.

Deaconess Hospital, Edinburgh

At the annual meeting of the Deaconess Hospital of the Church of Scotland, held on April 3rd, it was reported that the reconstruction of the hospital was now well advanced. The new nurses' home, intended to house the entire nursing and domestic staff, with lecture rooms, sitting rooms, etc., was almost completed. A neighbouring block of buildings, previously a police station, had been remodelled, and would form a new wing of the hospital to be known as "The Lord Sands Memorial Wing." The cost of reconstruction was estimated at £40,000, and as the result of an appeal £28,000 had been received. It was hoped that the remainder would be subscribed through the Church of Scotland by the end of the present year, so that the hospital might be reopened free of debt. As the hospital had been closed for a great part of 1935, the number of patients treated had been only 550. The chairman pointed out that the district nursing work in connexion with the hospital, as well as the maternity and child welfare work, had been carried on in spite of the reconstruction scheme.

Rowett Research Institute

The governors of the Rowett Research Institute at Bucksburn, Aberdeen, have appointed Dr. J. T. Irving, at present lecturer in physiology at the School of Medicine, University of Leeds, to be head of the physiology department of the Rowett Institute. The appointment is in succession to Dr. R. C. Garry, who was recently elected to the chair of physiology in the University of St. Andrews. Dr. Irving was born at Christchurch, New Zealand, and received his medical education at Cambridge, where he gained first-class honours in 1923 and 1924 in the two parts of the Natural Sciences Tripos. In 1927 he held a Beit Fellowship at Oxford University. He was lecturer in physiology in the University of Bristol from 1931 to 1934, and, later, lecturer at Leeds.

England and Wales

L.C.C. Hospitals and Medical Services

It is proposed to provide a radium unit at Hammersmith Hospital—the L.C.C. hospital with which the British Post-Graduate Medical School is associated—at a cost of approximately £2,000. The unit will comprise a radium laboratory and treatment room, with a radium-safe room adjoining, and a workshop for the manufacture and repair of apparatus. Another innovation at Council hospitals is the provision of oxygen tents. Two tents are at present in use, and more are to be delivered shortly. It is proposed to employ a physical therapeutist for a total of one hundred visits over a period of twelve months to explain the details of working the tent to the medical and nursing staff in charge of the cases for which it is used. It is expected that during that year the hospital staffs will become trained in the use of the tents. The fixed establishment of medical staff at L.C.C. general hospitals was last reviewed in July, 1934. Since that date the work at a number of institutions has increased and in other ways general pressure has been observed in connexion with the work of the medical staff. It has been found necessary to provide additional medical assistance temporarily at certain hospitals, notably Lewisham and St. Mary Islington.

The arrangements for the diagnosis and treatment of venereal diseases in London—arrangements in which six adjoining counties and three county boroughs participate—are to be continued for a further year. During 1935 the number of new cases presenting themselves at the hospitals was 28,403, an increase of 280 on the year before, but only 15,232 were found to be venereal, as compared with 16,064 the previous year. Of the total number of new cases those of syphilis numbered 3,930, gonorrhoea 10,952, and soft chancre 350. The ratio of total attendances to total new cases is about forty to one. During the year 38,354 pathological examinations were undertaken for practitioners.

Some new staff arrangements at Maudsley Hospital are recommended by the Mental Hospitals Committee of the L.C.C. The first assistant medical officer has duties assigned to him which are comparable in importance to those performed by the deputy medical superintendent of one of the large mental hospitals, and it is proposed that his position should carry with it the salary and status assigned to a deputy medical superintendent, and that he be designated "clinical director." Unpaid clinical assistants at Maudsley frequently give useful service while gaining valuable experience for themselves, but hitherto no arrangement has been made for a clinical assistant who cannot afford to give wholly gratuitous service to be allowed free board and lodging in the hospital in return for service as authorized at London County mental hospitals. It is now proposed that the arrangement already authorized for the latter institutions shall be extended to Maudsley.

Atmospheric Pollution

The most comprehensive educational exhibition dealing with the question of smoke abatement and of atmospheric pollution which has yet been held in this country is to be opened by Sir Kingsley Wood, M.P., Minister of Health, at the Science Museum, London, in October next. It is being designed to show the harmful effects of polluted atmosphere on health, buildings, vegetation, works of art, fabrics, and food, as well as the difficulty and danger caused to aviation. Sections of the exhibition are being arranged by the Department of Scientific and Industrial Research, with the co-operation of other official bodies and representative organizations of the electricity, gas, oil, and solid smokeless fuel industries. During the month the annual national conference of the society will be held at the Museum. A day is to be given over to discussion of the municipal aspects of smoke abatement by representatives of the 100 municipal authorities throughout Great Britain who are affiliated to the society. Other days are to be devoted to industrial and domestic as well as general considerations of the problem.

Costing Methods in Local Government

The Ministry of Health has issued a circular to county and county borough councils enclosing Part I of the Costing Returns for 1934–5. This part contains particulars of Poor Law hospitals, general hospitals administered by local authorities, sanatoria, and maternity homes and hospitals, and shows the average weekly cost per inmate under various heads of expenditure in each institution of each class. These particulars are collected and issued annually by the Ministry in order to assist local authorities in the economical administration of the institutions under their control. In recent years the value of costing methods in securing business efficiency has become recognized more and more, not only in industry but also in local government. Other examples in the sphere of local government are provided by the costing returns for sewage disposal works, for refuse collection and disposal, and for street cleansing, which are referred to in the Ministry's annual reports. The present returns may be obtained, price 1s., direct from H.M. Stationery Office or through any bookseller.

Births and Deaths in London

The crude birth rate in London in 1935 was 14.9, which was also the rate for 1934; the corrected rate is expected to be about 13.3. The crude rate is the registration figure divided by the estimated population, and the corrected rate is the final figure after the figures for non-Londoners are excluded. The crude death rate for 1935 was 11.2, as compared with 11.9 in 1934; it is estimated that the corrected death rate will be about 11.3. The registered deaths among infants under 1 year of age numbered 3,207, or fifty-one per thousand registered births, against 3,788, or sixty per thousand in 1934. The corrected death rate for infants in 1934 was sixty-seven, and that for 1935 will be about fifty-eight. The deaths registered from puerperal sepsis and other accidents of childbirth numbered 139, or 2.21 per thousand registered live births, against 158, or 2.5, in 1934. The corrected death rate for 1935 should not exceed 2.5 per thousand. The crude maternal mortality rate of 2.21 is the lowest recorded in London, the previous lowest being for 1934. There were 531 deaths from street accidents registered in 1935, as compared with 752 in 1934, 763 in 1933, 683 in 1932, and 731 in 1931.

Winsley Sanatorium

More beds are now available for early cases of pulmonary tuberculosis in the treatment blocks of Winsley Sanatorium, near Bath, and the number of those at the disposal of paying patients has been increased to eighteen. The inclusive fee for patients from Gloucestershire, Somerset, and Wiltshire is 50s., and for those elsewhere it is 55s., the concession to the first-named being in recognition of the help given originally by those counties when the scheme was launched. The sanatorium is not run for profit. A descriptive booklet is being circulated, in which appears a short note of the history of the institution. In 1899 the "Three Counties Branch" of the National Association for the Prevention of Tuberculosis came into being, and the origin of the sanatorium was thus voluntary. An increasingly close co-operation with local authorities has resulted in the maintenance of 108 of its 135 beds being borne by them, and a smoothly running scheme has developed which combines the voluntary hospital system with the State and civic administration. Thus fifty-eight beds are maintained by the Bristol City Council, thirty-four by the Wilts County Council, and fourteen by the Bath City Council. All patients, whether admitted to "maintained" or to "paying" beds, are received on exactly the same conditions as regards the allocation of a room, treatment, and dietary. Medical practitioners can arrange also for their patients to attend the sanatorium by appointment for preliminary radiological examinations and reports at small fees, and there are facilities for pneumothorax refills. The medical unit is compactly designed with a consulting room, treatment rooms, dispensary, laboratory, *x*-ray equipment, and a dental and throat room.

Reports of Societies

RENAL CALCULI IN PREGNANCY

At a meeting of the North of England Obstetrical and Gynaecological Society in Liverpool on March 20th, with the president, Dr. RUTH NICHOLSON, in the chair, Mr. C. H. WALSH read a note on renal calculi in pregnancy.

He said it had been noted that kidney stones were rare in pregnancy, this being accounted for by the fact that renal lithiasis occurred, as a rule, in women between the ages of 30 and 50, and most pregnancies before 35. The condition presented many interesting features regarding diagnosis, the value of biochemical tests as a guide to treatment and prognosis, and the particular line of treatment. A further point of interest was the presence of ureteric dilatation normally occurring in pregnancy. Mr. Walsh had seen three cases of renal lithiasis in pregnancy during the latter half of 1935. The first patient, aged 36, was seen at the fourteenth week of her third pregnancy. She had complained of pain in the left loin for two years. The urine contained blood and *B. coli*, but no casts were present. *X* rays had revealed two stones in the left kidney. Nephrolithotomy was performed, with removal of the calculi. Convalescence was uneventful. The second patient, a trigravida aged 30, was first seen at the twentieth week of pregnancy, when she was regarded as a mild case of toxic albuminuria and treated as such, but the albumin increased in amount, so she was admitted for investigation. The output of urine was up to 67 ounces per day, and a trace of blood and pus was found, with *B. coli* in moderate amount. She improved with rest and dieting, and was discharged two weeks later, the urine containing a trace of albumin only. She was readmitted at the thirty-sixth week with marked oedema and albuminuria, and, having slight hydramnios, was examined radiologically, when a large branched calculus was apparent in the right kidney. Mainly on account of the hydramnios and oedema, it was decided to induce labour at the thirty-eighth week. The labour and puerperium were normal. Three months later, after further renal investigation had revealed a functionless right kidney, nephrectomy was performed. The third patient, a primigravida aged 20, was admitted at the twentieth week, acutely ill with symptoms simulating acute appendicitis, though the urine contained some albumin and pus. An extraperitoneal abscess was found, but the appendix was normal. The extraperitoneal tissues were drained and the wound partially closed. The pus contained *B. coli* and non-haemolytic streptococci, and an *x*-ray examination ten days later revealed a large calculus in the right kidney. The patient was kept under observation week by week, during which time her general health remained extremely good ; she went into labour at the thirty-eighth week, and was delivered by natural forces of a child weighing 5 lb. 4 oz. The puerperium was uneventful. Mr. Walsh felt that there were a number of points of interest in the cases. In only the first case was it possible to suspect a renal calculus from the history, and in view of this it seemed likely that renal stones were not infrequently missed. The second patient had been operated on for chronic appendicitis, and had been treated for toxic albuminuria before an *x*-ray examination on account of hydramnios revealed the true state of affairs. Regarding the investigations which were usually undertaken, he had been interested to learn if there was any biochemical test which would serve as a guide to prognosis and treatment in renal pathological conditions generally during pregnancy. After an investigation of a number of cases of toxic albuminuria with regard to blood pressure, blood urea, and urea concentration findings, and their correlation with clinical results, he was of the opinion that only in the case of blood pressure readings was a reliable guide to be obtained. The urea concentration and blood urea were much too erratic to give any guide to prognosis. These remarks applied particularly to toxic albuminuria, but were not considered out of place in discussing renal calculi. Regarding the question of ureteric dilatation during pregnancy, a feature which was evident on the sound side in each of the three cases, demonstrated by the injection of uroselectan and *x*-ray therapy, this was a normal state of affairs during pregnancy, and had originally been attributed to pressure on the ureters at the pelvic brim by the pregnant uterus. There seemed little doubt in view of recent work that this theory was quite wrong, and that the true explanation lay in an altered endocrine function present in pregnancy and affecting all involuntary muscle ; it acted either directly or in conjunction with the sympathetic nervous system. In the question of treatment of diseased organs complicating pregnancy Mr. Walsh had formed the opinion that there was a widespread tendency towards terminating the pregnancy as a preliminary to surgical treatment. He considered this attitude entirely wrong, and felt that, speaking generally, even severe surgical conditions could be dealt with with little risk of interrupting the pregnancy. Applying these principles to the three cases under review, he considered that the first was correctly treated by nephrolithotomy at the fourteenth week. In the second case the renal lithiasis was not diagnosed until the thirty-sixth week, and there was thus little to be gained and much to be lost by surgical intervention at that time. In the circumstances induction of labour at the thirty-eighth week appeared to be rational. Looking back at the third case he concluded that nephrectomy at the twenty-fourth week was the method of choice, despite the fact that, as things turned out, conservative treatment resulted in a live birth, leaving a diseased infected kidney to be removed later. He summarized his conclusions as follows. (1) The diagnosis of kidney stone was difficult, and liable to be mistaken for conditions peculiar to pregnancy. (2) In reading radiographs during pregnancy after the intravenous injection of uroselectan it should be remembered that there was normally a state of ureteric dilatation. (3) Urinary and blood biochemical tests were of no help in prognosis or as a guide to treatment. (4) The guiding principle to treatment should be to remove the stones or kidney, and ignore the pregnancy.

Mr. J. W. BURNS agreed that the biochemical tests were of no value. He thought that the blood pressure was more useful as a guide to treatment in cases with albuminuria. Mr. P. MALPAS did not agree with the previous speakers, and thought that the non-protein nitrogen index had a certain value in eclampsia, especially if taken together with other findings and the clinical condition of the patient. If there was gross liver damage this index might not be grossly increased, although the patient was gravely ill. He referred to six patients whom he had recently encountered suffering from renal calculi. Mr. A. A. GEMMELL supported Mr. Malpas, and attached some value to renal efficiency tests during pregnancy. These were useful if fitted in with the clinical condition. He had found that the blood urea and the urea concentration tests improved in cases where the foetus had died *in utero*. Mr. HAMILTON referred to a patient with renal calculi who gave an eight-year history of haematuria. There was a large branched calculus in the left kidney. Pregnancy was allowed to continue until the thirty-eighth week, when induction was carried out for disproportion. The haematuria disappeared after delivery. Mr. C. M. MARSHALL thought that the liver damage vitiated the blood non-protein nitrogen results, and referred to a case in which he had decapsulated the kidneys because of the clinical condition of the patient, although the non-protein nitrogen was under 40 mg. per cent.

Simmond's Disease

Mr. J. ST. GEORGE WILSON, reporting two cases of Simmond's disease, said that this syndrome, which was most common in women, was first described in 1914, and was typified by progressive loss of weight and senile changes—such as loss of hair and an aged appearance, inhibition of genital function, and amenorrhoea. Lassitude and weakness were marked. The basal metabolism was markedly lowered, and the pulse was slow. There was anaemia, and there might be hypoglycosuria. Radiologically there might be enlargement of the sella turcica if the lesion was a neoplastic destruction of the pituitary. The first patient, aged 29, had complained of loss of

weight, following a normal confinement. There had been daily vomiting, dizziness, and loss of power in the left hand. She had, however, no loss of hair, and did not look prematurely aged. She had complained of amenorrhoea for the last twelve months, having previously been irregular. She was poorly nourished, having suffered from marked loss of weight. The blood pressure was 114/72, and the pulse 44. The cervix was multiparous and the body of the uterus small. She was treated by injections of insulin and pregnyl, and extra salt in the diet. The second patient, aged 37, also dated her symptoms to a confinement. She complained of loss of weight for twenty-one months, nausea for twenty months, and weakness for six months. She was stated to be looking much older than previously, and had had amenorrhoea for twenty-eight months. Her weight was 4 st. 10 lb. She exhibited hair on the face, pigmentation of the abdomen, a blood pressure of 98, and a pulse of 42. She had complained of amenorrhoea constantly for the preceding twelve months, having previously had scanty periods at intervals of five to six months. The uterus was found to be senile. She was treated by injections of antuitrin S and oestroform, and was given olive oil ; eight months later she had gained 3 st. in weight.

Mr. S. B. HERD commented on the fact that in each case the condition had closely followed pregnancy. He wondered if in the past these cases had merely been considered as instances of superinvolution. Mr. T. N. A. JEFFCOATE considered superinvolution of the uterus to be due in all cases to pituitary disease. He also questioned whether there might not be also in Simmond's disease an element of suprarenal dysfunction. Dr. E. A. GERRARD referred to the relationship between prolonged suckling and superinvolution. He did not agree with the last speaker that there was of necessity a diseased pituitary body. Mr. F. E. STABLER asked if an Aschheim-Zondek test had been performed, as he had seen a case of the condition where it was slightly positive. Mr. ST. GEORGE WILSON replied that he thought there was a definite distinction between Simmond's disease and a simple uterine subinvolution. In the latter condition there was no loss of weight or other disturbance, and he failed to see that it was necessarily due to pituitary disease. An Aschheim-Zondek test had not yet been performed, but would be arranged.

Uterine Rupture and Placenta Praevia

Mr. C. MCINTOSH MARSHALL described two cases of uterine rupture associated with placenta praevia. In the first case the rupture was spontaneous and in the second case it was traumatic, owing to a stomach tube, which had been inserted into the uterus as a means of induction of labour, having been passed through the uterine wall into the bladder.

The first patient was a 4-para, aged 29. She was admitted to hospital believing herself in labour, but the pains passed off. Vaginal examination a week later revealed a lateral placenta praevia, the os admitting one finger. After a further week pains began spontaneously, and after nine hours in labour some blood and clots were suddenly passed from the vagina. Vaginal examination showed that the cervix, though not too well taken up, admitted two fingers, and that the membranes were ruptured. The os was partially covered by the placenta, which was on the posterior wall of the lower segment. The child's head was macerated, and there was marked overlapping of the parietal bones. Willett's forceps was applied to the scalp, and a weight of 1 lb. attached. No further bleeding occurred. Four hours later the child, which weighed 5 lb. 11 oz., was delivered ; it was macerated, and had an offensive odour. No bleeding followed the birth of the child, but an hour later the patient was pale and her pulse was rapid and soft. The placenta had not been delivered. During the next few hours her condition improved, and four hours after delivery it was decided to remove the placenta. As soon as anaesthesia had been induced a blood transfusion was commenced, and on passing the hand into the uterus a laceration was discovered in the lower segment. Laparotomy followed, and a large amount of free blood was found in the peritoneal cavity, also the placenta. There was a vertical tear three to four inches in length in the posterior wall of the lower segment and cervix. Subtotal hysterectomy was performed, and a drainage tube was inserted. Convalescence was stormy, but eventually the patient made an excellent recovery.

Mr. Marshall referred to a case reported by De Sa where spontaneous rupture of the uterus had also occurred through the placental site.

The second patient was a primipara, aged 22, who was six days over her expected date, the head being still above the brim. A stomach tube induction was carried out by an experienced house-surgeon. A general anaesthetic was not employed, but the tube was passed under direct vision, a speculum being used and the anterior lip of the cervix grasped with a sponge forceps. When about two inches of the tube had been inserted some resistance was met with, but was easily overcome, and the rest of the tube was inserted without difficulty. Pains commenced five hours later, and after a further ten hours the cervix was almost fully dilated, the head, however, being still above the brim. The stomach tube had not been extruded. The urine was found to be heavily stained with blood. On cystoscopy the stomach tube, which had been palpated through the anterior vaginal wall, was clearly seen in the bladder. Delivery of a living child was effected by version and extraction, and the placenta, which was inserted low on the anterior uterine wall, was removed manually. It was noted that its lower edge was about one inch from the cervical lip. A median suprapubic incision was made, and the utero-vesical pouch of peritoneum was inspected ; no injury was seen. The peritoneum was then closed ; suprapubic cystotomy was carried out and the tube removed. The bladder was drained. Cystoscopic examination a month later revealed a small, slightly raised puckered area lying behind the base of the bladder. This had a similar appearance to the cystotomy scar in the fundus.

Mr. ST. GEORGE WILSON expressed doubt whether in the second case the stomach tube had passed through the placental site. He was inclined to think that it had been forced through the wall of the cervix. Mr. A. J. STABLER thought that the first case could hardly be considered as one of spontaneous rupture, since Willett's forceps had been applied. Regarding the second case, he felt that a tube should never be passed without general anaesthesia. Apart from the difficulty which might be experienced, it was impossible otherwise to ensure an adequate aseptic technique. Dr. E. A. GERRARD supported the latter observation, drawing attention to the morbidity which frequently followed bougie induction. Mr. C. H. WALSH questioned whether true spontaneous rupture of the uterus ever occurred. It was interesting to note that all cases reported had been in multiparae ; the suggestion was that trauma at a previous confinement was really the aetiological factor.

In reply Mr. MARSHALL said that he felt quite sure that the tube had not perforated the cervix, but that it had been deflected by the edge of the placenta and had passed through the placental site. Blood transfusion was a most valuable and life-saving measure in cases of placenta praevia.

RESULTS OF RADIUM IN CERVICAL CANCER

At a meeting of the North of England Obstetrical and Gynaecological Society in Sheffield on February 28th, with the president, Dr. RUTH NICHOLSON, in the chair, Professor FLETCHER SHAW and Professor D. DOUGAL presented a paper on the results of radium treatment of carcinoma of the cervix uteri, of which the full text is published at page 786 this week.

In the subsequent discussion the PRESIDENT congratulated Professors Shaw and Dougal on their paper and on the excellence of their results. She read on behalf of Mr. Malpas the figures from the Liverpool Radium Centre of cases treated during the years 1929 and 1930, the total five-year survival rate of all cases treated being 33 per cent. The method used was that of Heyman, followed by deep *x* rays. The president recalled a personal case where death had occurred from pulmonary embolism.

Mr. BURNS asked if any of the patients had suffered from annular constriction of the rectum following treatment ; he had observed the condition in two cases. He also expressed the view that radium therapy was well worth while even in very advanced cases, as it relieved pain and made the end easier. Mr. T. F. TODD commented on the excellence of the results obtained, which he considered to be far and away ahead of anything else so far achieved. Except for one single year's results

from the Marie Curie Hospital he knew of nothing even comparable in the international literature. He considered that radiation was definitely preferable to surgery even in early cases. At least eight of the international centres had published a five-year survival rate of over 50 per cent. in operable cases: 10 or more per cent. better than those of surgery. Mr. Todd recalled Beckwith Whitehouse's published figures of 500 cases treated by several teaching hospitals in this country. The five-year survival rate was about 11 per cent.—a marked contrast to the present series.

Dr. ELLIS gave figures from the Jessop Hospital for Women, Sheffield, showing a 30 per cent. five-year survival rate. It was customary in Sheffield to perform Wertheim's operation on first-stage cases (if fit for operation) after preliminary irradiation. If the tumour was bulky and infected the patient had: (1) *x*-ray treatment for two weeks to the whole pelvis; (2) two weeks' rest, with douches; (3) radium; (4) one day later, Wertheim's operation; (5) if glands were found to be involved, further *x*-ray treatment to the whole pelvis was given. If the tumour was small and non-infected the procedure was: (1) a single dose of radium; (2) one day later, Wertheim's operation; (3) if glands were found to be involved, a full course of *x* rays to the whole pelvis was given. Cases in stages two, three, and four were given *x* rays, radium treatment, and then further *x*-ray therapy. Dr. Ellis showed a series of slides indicating the technique of the methods employed, also a slide to show the type of *x*-ray burn of the skin which, while healing perfectly, might be thought by the uninitiated to indicate an overdose—being in reality the dose aimed at. He also quoted Döderlein's figures in operable cases, which showed 80 per cent. five-year cures after complete irradiation as compared with 46 per cent. after operation. They afforded adequate reason for Döderlein's having given up the operative procedure. Dr. GERRARD drew attention to the excellence of the results in a series of cases which had been handled entirely by gynaecologists, without resort to their radiological colleagues. He thought that this was a point of importance, particularly since there was a growing tendency in certain areas for the general practitioner to refer malignant cases direct to the radiologist. This was hardly in the best interests of the patient, for a radiologist could hardly be expected to have had a wide experience in a special branch like gynaecology. The diagnosis in carcinoma of the cervix, particularly of the endocervical type, was not always easy, and the correct application of the radium was liable to present real difficulty unless the operator was regularly engaged in vaginal surgery. Mr. STACEY advocated Wertheim's operation in first-stage and early second-stage cases with radiation, since this precluded the ill-health from cystitis and proctitis which was liable to follow if radiation alone were employed. He considered that co-operation between gynaecologist and radiologist was advisable—the gynaecologist to diagnose the case, and the radiologist to decide the dose and apply the treatment. Professor MILES PHILLIPS also advocated the co-operation of gynaecologist and whole-time radiologist. He stressed the necessity of doing all one could to prevent carcinoma by the ruthless removal of the cervix whenever it was found in a badly damaged or chronically infected condition. The fact that the annual mortality rates showed, for a number of years, a steadily falling death rate from cancer of the uterus, whereas that from cancer in all other organs was increasing, was at least highly suggestive that this method of preventive treatment was becoming effective. Dr. CATHIE discussed the pathological aspect, referring to the grading of tumours as an aid to prognosis. He also referred to the question of radiosensitivity, and was inclined to disagree with the prevalent idea that the columnar-celled type of growth was radio-resistant.

Professor DOUGAL replied that the authors considered their series to be but small, and that they had perhaps been fortunate in their results. He agreed with Mr. Todd that there was now no justification whatever for the Wertheim operation. Regarding the question of rectal symptoms following the application of radium, he added that he had seen one case where a fistula had occurred, but the dose given had been unduly high—11,000 mg.-hours. He considered that co-operation between surgeon and radiologist was undoubtedly desirable, though so far as the treatment of carcinoma of the cervix was concerned the dose was largely standardized. He did not think that a radiologist was the best person to apply the radium in this region. Even an experienced operator sometimes found great difficulty in advanced cases with the insertion of the intrauterine portion of the dose. Professor Dougal agreed also with Dr. Cathie that the columnar-celled type of growth was proving to be less resistant to radium than had been thought in the past.

BONY SEQUELS OF PARATHYROID TUMOUR

At the March meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, with Mr. J. L. KEEGAN in the chair, a case of generalized osteitis fibrosa was reported by Professors W. BOXWELL and W. J. E. JESSOP, Mr. HENRY STOKES, and Dr. T. G. HARDMAN. Professor Boxwell and Mr. Stokes gave an account of the clinical history and operative findings.

The patient was a woman aged 64, who in 1926 had sustained a fracture of the shaft of the right humerus, due to slight injury. During the following six years she had complained of pains in the back and shoulders, right hip, leg, and ankle; she had developed scoliosis and muscular atony, and had lost weight. In June, 1932, a fracture of the left fibula occurred for an entirely inadequate reason, and in the next October a painful swelling appeared on the inner border of the right tibia. In the next month a parathyroid tumour was removed from behind the manubrium sterni, and this was followed by rapid improvement in the patient's clinical condition. Bone pains and muscular weakness disappeared inside two months, with a gain in weight of 28 lb.

Dr. T. G. HARDMAN showed radiographs of the right tibia and left fibula, demonstrating multiple large cysts; of the thorax, showing extreme scoliosis and cystic changes in the scapula and glenoid fossa; of the skull, showing the cranial bones rather thickened, with localized translucent areas due to small cysts; and of the pelvis, showing large cystic cavities in the neck of the femur and iliac bones. Radiographs taken subsequent to the operation revealed that the cysts had become much smaller; the bone was regenerating, and the cystic degenerations were becoming filled in.

Professor JESSOP described the biochemical findings, and the tumour and bone histology.

A detailed investigation of calcium metabolism showed a constantly high serum calcium figure and a persistently low plasma inorganic phosphate figure. Plasma phosphatase was eight times the normal, and the total calcium output on a low calcium diet was three times the normal. After the operation the serum calcium fell rapidly, and mild tetany developed during the first week; this was controlled by a diet rich in calcium, calcium lactate, vitamin D, and injections of parathormone. In a fortnight the serum calcium figure returned to the normal, and the calcium excretion was normal one month after the operation. Three years later the serum calcium, plasma inorganic phosphate, and plasma phosphatase figures were normal. The tumour removed weighed 11 grams, and was surrounded by a capsule. Histologically it consisted of densely packed principal cells, many of which were very large and very vacuolated. Eosinophil cells were only present in very small numbers. Small masses of homogeneous eosinophil material were found sometimes around the walls of vessels and between rows of the principal cells. A piece of bone removed from the right tibia was obviously easier to cut than normal, and histologically showed osteoporosis, absorption and deposition of bone, and fibrosis. There was no evidence of delayed calcification, and the sections did not include a cyst or osteoclastoma.

Professor Jessop stated that the principal features of a case of parathyroid tumour could be seen to follow in logical sequence the mobilization of calcium from bony tissue which was produced by excess of parathyroid hormone. Removal of the tumour led to a correction of all the abnormalities, and often enabled the patient, previously an invalid, to lead an active life. An examination of twenty-five published cases showed that no one feature was invariably present. The order of importance of findings from the point of view of diagnosis would seem to be: (1) general decalcification of the skeleton; (2) continually raised serum calcium and lowered plasma

phosphate ; (3) increased calcium output ; (4) bone pain and tenderness ; (5) cystic changes in bone ; (6) spontaneous fractures ; and (7) muscular weakness and atony. Localized osteitis fibrosa, Paget's disease, multiple myelomata, and osteomalacia might resemble hyperparathyroidism, but chemical and histological examination would help to differentiate them. If there was general decalcification, with continually high serum calcium and low plasma phosphate figures, exploration of the neck was probably justified. In only about 30 per cent. of cases was there an initial complaint of bone tumour, fracture, or deformity. Bone pain was first to appear in over 50 per cent. of cases. Urinary calculi were a presenting symptom in two cases which showed skeletal change clinically or radiologically.

Mr. DENIS KENNEDY described a similar case, in which a fracture of the neck of the femur had occurred as a result of a trivial injury. A month later a painful swelling appeared in the left tibia, and after full investigation the patient was found to have all the features of a parathyroid tumour. The case was complicated by the fact that auricular fibrillation was present. The right lobe of the thyroid gland was isolated, and a parathyroid tumour was found in the centre of its posterior aspect. There was no post-operative tetany, and the patient was now well. Dr. C. L. MCDONAGH said that only twice had he seen such large cysts. He pointed out that the original fracture of the humerus showed no evidence of a cyst. In such cases the changes in the skull were the most definite means of diagnosis.

CORRESPONDENCE

A Crusade Against Acute Rheumatism

SIR,—The paper by Professor W. T. Ritchie under the above title, in your issue of April 4th, is a most valuable and timely one. Much has been written and said on this deplorable menace to the child and the adolescent, but I have never seen a more convincing case made out for its inclusion as a major public health subject.

London, with its rheumatic clinics and admirable in-patient accommodation, has given a fine lead, but without the encouragement and stimulation of the Ministry and Department of Health it cannot be expected that most public health committees and their councils throughout the country will realize the need for action. This is particularly true of the suggestion that a rheumatism medical officer, comparable in function and status to the venereal diseases and tuberculosis medical officer, should be appointed. There would be little hope of this in the case of most local authorities unless the medical officer of health had the strong backing of a Ministry or Department circular in putting forward the proposal. The Government medical departments are reluctant to appear to coerce local authorities, but I know that medical officers of health would often welcome more specific recommendations, as these greatly impress the members of public health and education committees.

If compulsory notification is thought too drastic a measure—though I do not see why it should be so regarded—Professor Ritchie's suggestion of beginning with a voluntary scheme should be adopted without delay. No doubt the Society of Medical Officers of Health and other professional bodies will consider the matter. It would be a great public and human service if they acted promptly.—I am, etc.,

Beckenham, April 6th. T. DRUMMOND SHIELS.

Modern Methods in Bottle-feeding

SIR,—After reading Dr. Jewesbury's letter on this subject in the *Journal* of March 28th, I read the annotation of February 22nd to which he refers. It had escaped my notice earlier, but I should like to say now that I very cordially agree with the sentiments expressed in it. It seems to me that Dr. Jewesbury has scarcely dealt faithfully with the criticisms of the Truby King feeding formulae which it contains. Nor is one entirely convinced from what he says that he is, as he very rightly says we all ought to be, " keeping an open mind."

Since the first attempts of Michael Underwood to put the study of this problem on a rational basis, the obvious goal has been to produce as a substitute for human milk a true imitation of it. It was believed at the time when Truby King popularized the milk modification which has become associated with his name that the goal was practically if not completely reached. Indeed, the word " humanized " was used and still is, as certain advertisements frequently remind us. Yet it has been known for many years that this approximation is much more apparent than real, since the two milks differ markedly in the nature of their proteins. Further, it is now well recognized, as was stated in the annotation, that the protein of cow's milk is relatively deficient in certain amino-acids which are of special importance to growth, so much so indeed that, if one is to come near the goal of true imitation in this respect, it is necessary to use the milk quite undiluted. The plain truth is that at present there is no method, at once simple and inexpensive (that is, apart from elaborate methods involving the use of proprietary preparations), whereby anything like a true imitation of human milk can be achieved. Fortunately, experience seems to show that this doesn't matter. What does matter, however, is that our methods should be constantly under review in the light of new knowledge. In the present state of our knowledge we are faced with the alternative of perpetrating faults of omission or of commission. On the whole I think it is true to say that, so far as nutrition is concerned at any rate, Nature is more tolerant of the latter than of the former. She can deal with moderate excess, but a very little shortage will thwart her.

Lastly, it should be realized that the relative indigestibility of whole cow's milk is not, except in very rare instances, due to its protein content *per se* but to the buffering effect of it on the acid of the gastric secretion. This has been conclusively shown by the marked success which has attended the use of whole milk " de-buffered " by the addition of lactic acid, as advocated by McKim Marriott. In my experience infants on this feed more closely resemble in steady and sufficient gain in weight and in general vigour and resistance to infection their breast-fed brothers and sisters than do those on diluted milk mixtures. I have had the opportunity of observing quite a number of such infants in later childhood, but have not so far detected any damage attributable to the " protein insult " in infancy!—I am, etc.,

E. R. C. WALKER, M.B., F.R.C.P.Ed.

Aberdeen, April 8th.

SIR,—In your issue of March 28th Dr. Jewesbury replies to the annotation that appeared in the *Journal* on February 22nd (p. 370) under the heading " Modern Methods in Bottle-feeding." His letter, while it occupies a whole column, rather surprisingly does not refer once to the point at issue. The gist of the annotation was that owing to the relative deficiency of certain amino-acids in cow's milk as compared with human milk it was not sound practice to base the protein content of a milk mixture for infant feeding on the same basis as human milk. In other words, equal quantities of protein, one from human milk and the other from cow's milk, are not of equal nutritive value to the child.

The letter from Dr. Jewesbury does not refer to this question of the balance of amino-acids, but only to the optimum amount of protein in the milk to make it digestible. He refers to what he calls "suggestions," forgetting apparently that the biochemist is quite capable of measuring the relative strengths of the amino-acids in a protein. He seemingly does not realize that if his statements are correct, and that children on a cow's milk mixture thrive best on what biochemists can tell us is a semi-starvation diet, then he proves only that cow's milk is an unsuitable food for infant feeding. I think most medical men will agree heartily with the annotation of February 22nd; for while we all appreciate the valuable work done by the Mothercraft Training Society we deplore the dogmatism that has crept into this question of bottle-feeding.—I am, etc.,

Newport, Mon., April 6th. ROBERT D. BUCKNER.

Glycosuria of "Lag Storage" Type

SIR,—I have read with interest the article by Dr. Lawrence (*Journal*, March 14th, p. 526) and the subsequent correspondence on the above subject, but in Dr. Lawrence's reply in your last issue there is one point which is certainly erroneous. He is mistaken in thinking that curves of the "lag storage" type are rarely if ever produced by low carbohydrate diets. In the course of some experiments on metabolism I had occasion to investigate the effect of low carbohydrate and high carbohydrate diets on the glucose tolerance curve of normal subjects, and in several instances when the subjects were given a low carbohydrate diet I produced typical "lag storage" curves, accompanied by glycosuria. The subjects for these experiments formed a random series of healthy individuals, and it would appear that the development of such a curve depends upon personal idiosyncrasy.

If the sugar tolerance curves of a series of young normal subjects, all receiving adequate amounts of dietary carbohydrate, are examined it will be found that the curves are of two main types. One, the common type, shows a fairly slow rise to the blood sugar value of about 140 to 150 mg. per 100 c.cm., followed by a slow fall, so that the return to the resting level is accomplished in two to two and a half hours. The other, the rarer type, shows a rapid rise to the region of 180 mg. per 100 c.cm. and a rapid fall to subnormal levels, so that the blood sugar has returned below normal in one to one and a half hours. If now these latter cases are given a low carbohydrate diet one of two things may happen. The curve may increase relatively little in height, but may become sustained, so that it takes three or four hours to return to the resting level; or the curve may increase greatly in height, showing a rapid rise to the neighbourhood of 300 mg. per 100 c.cm., and a rapid fall to normal in one to two hours—that is, a typical "lag" curve. On again giving these subjects a normal diet the form of tolerance curve which they had previously shown returned.—I am, etc.,

University College Hospital Medical School, April 6th. H. P. HIMSWORTH.

Laryngeal Vertigo

SIR,—After reading Dr. D. K. Adams's paper on this subject in your issue of April 4th (p. 685) I was much puzzled by the paragraph which reads:

"Allbutt and Rolleston also quote McBride as explaining the phenomenon by the act of closing the glottis, with the resulting intrathoracic pressure changes causing syncope or a tendency to syncope. Relief would follow relaxation of the spasm. While this would seem to be a reasonable explanation of the sequence of events in some instances, it certainly is not applicable to cases of the type described in the present paper, where the coughing was unaccompanied by dyspnoea and cyanosis."

I cannot see how Dr. Adams arrives at this conclusion, because the case he describes at length seems to me to be perfectly explicable on the lines he mentions. A cough is a full inspiration followed by forcible expiration. If in a susceptible person the latter be prevented by complete closure of the glottis syncope may ensue, but if on the other hand closure be not complete only giddiness may follow, both conditions being of very short duration. I cannot think why Dr. Adams introduces the question of dyspnoea and cyanosis, for so far as I know they are not features of typical cases of so-called laryngeal vertigo.—I am, etc.,

York, April 8th. P. MCBRIDE.

SIR,—I am grateful to Dr. D. K. Adams for his article on laryngeal vertigo in the *Journal* of April 4th (p. 685). He remarks that the condition is largely unknown to the present generation of clinicians: this is certainly true. For five years I have suffered intermittently from typical attacks, and although I have discussed the symptoms with many friends and colleagues the condition remained a mystery to me until I read Dr. Adams's excellent description. It may be of value to record my own case.

I am now 57 years old; until the age of 18 I suffered from severe spasmodic asthma. At this age the typical attacks disappeared, but I was left with moderate emphysema and a cough which was apt to become troublesome after any ordinary cold or laryngeal trouble. This cough has become slightly worse during the last five years. In nature it is explosive and paroxysmal, and can be brought on by various causes such as indigestion, excitement, too much cigarette smoking, or even placing the corner of a towel in my left ear. The sight of food will sometimes start it.

A few years ago I was playing bridge (I believe I had been "doubled," and hoped to make my contract) when suddenly I coughed. The next thing I knew was that I was lying forward with my head on the table and all the cards were scattered on the floor. I felt very foolish, but perfectly well. A few weeks later I was leaning forward in a chair, listening to the wireless, when a very similar thing happened. I coughed two or three times and fell forward on to the ground, unconscious. When I recovered—a matter of a few seconds, I gather—my wife was kneeling beside me. She asked me how I felt, and I said "Very well." The same thing happened again a few months later: this time I felt my pulse directly I came round and found it slow and full. I was told that there was no cyanosis, but my face was "very red."

Two other attacks are worth recording, as they were both ushered in by only *one* sharp cough. In the first, we were staying at a London hotel and I awoke in the middle of the night feeling as though I had a slight asthmatic attack. There was some medicine on the chest of drawers, and I started to get out of bed. In the act I gave one cough, and the next thing I knew was that I was lying spreadeagled on the ground beside the chest of drawers. I had knocked my head, otherwise I felt quite well. The last attack was somewhat similar. I was standing up, gave one cough, and became unconscious. In falling I tore away the fittings to an electric fire that was just behind me.

Besides this type of attack I have another, in which I do not quite lose consciousness and try to prevent people noticing that anything is the matter. This follows spasmodic attacks of coughing, and the most noticeable subjective sign is a ring area of numbness round the wrists. Once or twice I have been dimly conscious that my right hand was making purposeless rotating movements.

During the last year I have had a few attacks of the milder type, but no complete "black-out"—to borrow a very apt expression used by an eminent physician to whom I have described these attacks.

My general health is excellent, but I do not start to cross a road in London when a coughing fit is imminent.

I have always maintained that the symptoms are due to some vascular disturbance, but it is interesting to note that a very slight cough can usher in an attack.

—I am, etc.,

April 7th. M.D.

The Disk-shaped External Semilunar Cartilage

SIR,—This condition is by no means as rare as Mr. A. G. Timbrell Fisher's interesting article in your issue of April 4th (p. 688) implies. Recently Mr. E. Bell Jones described fourteen cases from Liverpool (*Liverpool Med.-Chir. Journ.*, Part II, 1935, xliii). Apart from these I can remember offhand removing nine such disk cartilages. In four of them there was a multiple tear. In most of the others the disk was thin posteriorly where the condyle rested and thick anteriorly. It is the movement over this thick anterior portion that causes the typical "bump." In two patients the condition was bilateral, and in one of these and one other there was a hereditary element, the mother having been similarly affected.

A "discoid" cartilage may exist without giving the characteristic "bump" referred to. In two of my patients, both children, there was no such sign. It is, further, my feeling that the condition exists in many people without giving rise to any symptoms. I have seen a considerable number of infants who have "clicking" knees, the click being indistinguishable from an external cartilage click. But as the children began to walk the click disappeared, and the knees have given no more trouble, though, of course, they may do later in adult life.

—I am, etc.,

Liverpool, April 9th. B. L. MCFARLAND.

Organic Bases of Psychoses

SIR,—Although the case reported by Mr. Norman M. Dott and Dr. W. M. C. Harrowes (*Journal*, April 11th, p. 744) is headed "Organic Basis of a Psychosis," it would appear from the context that the authors themselves are doubtful whether the organic features were anything more than coincidental, or, at the most, precipitating or aggravating, and this attitude is justified by their description of the case and its treatment. Their patient's personality, the product of an unfortunate inheritance, upbringing, and environment, provided fertile soil for the development of a psychosis, the actual efflorescence of which may have been determined by organic and/or psychic factors.

It is true that the authors do not claim to have accomplished by their operation anything more than the relief of their patient's supraorbital neuralgia. She was sent home "convinced that her pain had gone," but they do not say that her depression, agitation, or delusions had disappeared. In fact, during her convalescence from the operation she was "suspicious" of necessary post-operative treatment—a symptom indicating a persistent paranoidal outlook. No one would deny that coincidental organic diseases in a psychotic patient are susceptible to the same methods of treatment as those in normal individuals, but such treatment may leave the psychosis unaffected. The authors themselves stress the difference apparent in their patient's attitude towards her organic pains on the one hand and her somato-psychic delusions on the other; she herself recognized the essential dissimilarity.

A word of warning appears to be necessary in order that the significance of this article be not misinterpreted as a reason for inflicting upon our already wretched melancholic patients further misery in the shape of wholesale nerve resections, ganglionectomies, and injections of alcohol in the hope of removing the "organic basis" of their disease—much the same fate, in fact, as has already befallen a host of schizophrenics, in whom septic foci have been assiduously tracked down and surgically eradicated.

—I am, etc.,

West Park Mental Hospital, Epsom, April 13th. C. R. BIRNIE.

Hemiplegia: Rapid Recovery

SIR,—On October 10th, 1935, I was sent for to see an old man, aged 83, a retired carpenter, who I was told had just had a stroke. I met the messenger at my gate, and was in the patient's kitchen in two minutes. He was fully dressed, lying unconscious on a couch with obvious right-sided hemiplegia, drooping corner of mouth, and marked flaccidity of right arm and leg compared with the left side. As I knew the old man very well, and that he suffered from a feeble heart due to his great age, I called for brandy, which was produced forthwith.

I mixed 1 oz. of brandy with 1/2 oz. of warm water, and told his wife to talk to him and give it in teaspoonfuls one after the other. By the fifth teaspoonful the fingers of his right hand moved, then his right wrist, elbow, and knee. There was no movement of the left side. By the tenth teaspoonful all signs of hemiplegia had gone, and a few minutes later he recovered consciousness, but was dazed.

It seems that the blood had stagnated in his brain preparatory to forming a thrombus, but the powerful stimulus of the brandy restored the circulation before the thrombus was formed, and so averted a hemiplegia. To-day the old man is quite well. This is a use of alcohol which I hope my friend Dr. R. Cove-Smith would approve (vide *British Medical Journal*, March 21st, p. 596).

—I am, etc.,

Lincoln, April 6th. G. D. SUMMERS, M.R.C.S.

A Plea for Diagnostic Symbols

SIR,—Most practitioners must at some time or other have been presented by a patient with a scrawled transcription of hospital out-patient notes. Sometimes the information is misspelt and unintelligible; as often as not it is dangerously accurate.

There can be no doubt about the following, which was copied out neatly and deliberately by a female patient only last week: "typical carcinomatous filling defect of unusual length in lower colon." A short time ago, a patient of mine, aged 30, copied out "carcinoma of pharynx." He looked it up that night in a medical dictionary. A few moments later he screamed out "I have got cancer!" threw things about, smashed furniture, and behaved like a maniac. The police had to be called in to control him. He died a little later in hospital. Another patient, a young girl of 21, found the word "fibrosarcoma" in her notes, and challenged me with a deathly pale face: "I have cancer, haven't I?" It was not easy to convince her that her fibrosarcoma of the thigh had an excellent prognosis. It is equally tragic, too, that another patient whose only illness was a slight operation for an abscess of the breast should be tortured by "?malignant" for the remainder of her life.

I realize that it is practically impossible to prevent a patient from stealing a glance at his out-patient notes, but surely we are not so lacking in ingenuity that we cannot invent a recognized system of symbols. It may not be generally realized by the busy practitioner how often his letter to hospital is steamed open by the anxious patient. Such terms as "angina pectoris" and "coronary

thrombosis " produce almost the same effect as a sentence of death. Medical dictionaries and encyclopaedias have opened our terminology to any inquiring layman. We can no longer take refuge in high-sounding " latinisms." Medical secrecy requires a more effective cloak if we are to consider the patient's interest. Let us not delay.—I am, etc.,

London, W.9, April 7th. S. H. LUBNER.

Vitamins for Habitual Abortion

SIR,—In your issue of April 11th (p. 752) you published a clinical memorandum under the above heading from Dr. D. W. Currie of the Leeds Maternity Hospital and the University of Leeds. In this he was good enough to mention the services that these laboratories have been only too happy to render him during his investigations. Will you allow me to emphasize the need for adequate dosage in this treatment? This is evident from the fact that each capsule of wheat-germ oil *extract*, of which the dose was one per day, contained liquid unsaponifiable matter from 5 *grams* of wheat-germ oil, dissolved in a little vegetable oil to a volume of 3 minims. Each capsule, therefore, represented about twenty-five times its own volume of wheat-germ oil, or about 1¼ fluid drachms.—I am, etc.,

A. L. BACHARACH, M.A., F.I.C.,
Chief Chemist, Glaxo Laboratories.

Greenford, Middlesex, April 9th.

Medical Coroners

SIR,—With reference to the great controversy over the English coroner system may I suggest that as a result of similar difficulties arising in the coroner system in Massachusetts there was established here a system which has proved its value over a period of fifty-eight years. The Massachusetts Medical Society and the Massachusetts Bar Association, as a result of the unfortunate happenings under the coroner system, made a joint study of the medico-legal problems involved following a death by violence. They concluded that there were two basic questions requiring answer in relation to a violent death: (1) What caused the death? which could only be answered by medical investigation, and (2) Who caused the death? which was a question for the police and the courts to answer.

The duties of the coroner require him to straddle the functions of two professions—medicine and law—and demand of him exceptional qualifications which few men possess. The coroner's court may have served a useful purpose in primitive civilizations, but it has outlived its usefulness. In present-day practice the police have usually taken action before its deliberations are completed and the courts ignore its dicta in the actual trial of a case. Under modern conditions the coroner is an anachronism.

In 1877, as a result of the joint action of the Bar Association and the Medical Society, Massachusetts abolished the coroner. The responsibility for determining the cause and manner of the death is placed upon medical examiners. The search for the criminal and the investigation of the crime are assigned to the police and courts. Inquests are held, by courts of first instance, only when the death may have resulted from " the act or negligence of another," and even in this respect are sharply limited, since judicial action has already been taken in relation to most of the deaths. No judicial inquiry follows the medical examiner's private investigation in deaths from simple accidents, alcoholism, anaesthetics, or in deaths occurring during operations. Suicide has been eliminated from the list of crimes. In deaths related to industry a record of such relation is made on the certificate of death, and the departments of industrial accidents and of labour and industry take action. This service has been so satisfactory that it has been adopted in part in the other New England States, excepting one, in New York City and in Essex County, New Jersey.

It usually requires overwhelming evidence of the unfit or unsatisfactory character of a service which is part of a judicial system to overcome what Shelley calls " the unconquered powers of precedent." Scandal served to bring about a constructive remodelling of our medico-legal system, which now recognizes the importance of the functions of the medical profession, and has simplified and modernized the investigation of deaths by violence.—I am, etc.,

TIMOTHY LEARY, M.D.,
Medical Examiner for Suffolk County.

Boston, Mass., March 26th.

*** Dr. Leary encloses a reprint of a short paper on the medical examiner system which he contributed to the *Journal of the American Medical Association* of August 10th, 1927.

Indoor Assistantships

SIR,—As an indoor assistant I read with interest and not a little amusement the letter of Dr. Norman Ross (*Journal*, April 4th, p. 725). I am afraid Dr. Ross is prone to exaggeration when he says that every indoor assistant will support him in saying that the position is " soul-destroying and demoralizing." I for one disagree, and I have had five years' experience as an indoor assistant.

Dr. Ross has evidently had bad luck in his choice of principals, but surely all principals are not such slave-drivers as he makes them out to be. There is some truth in his statement regarding the assistant doing the inconvenient work, but, after all, is not that his job? I think the explanation lies in the fact that the principal has his work cut out dealing with garrulous private patients who, naturally enough, prefer to see the principal and not his assistant, and therefore the latter has the less interesting and more " soul-destroying " task of writing out certificates for the panel patients.

I am now looking out for a practice of my own, and when this comes along I can truthfully say that I shall be very sorry to break away from the family and the many friends amongst whom I have been so happy for the last five years.—I am, etc.,

Lydney, Gloucestershire, April 6th. J. C. M. BRAMBELL.

SIR,—Allow me to congratulate my colleague Dr. Ross on his letter (*Journal*, April 4th, p. 725) exposing the indoor assistantship. Your readers as a whole must be ignorant of the unhappy relations existing between an assistant and his employer, and I trust you will give full publicity to the subject from an assistant's point of view. I myself was an assistant—once. My duties consisted in seeing about seventy " panel " patients a day, and doing an equal number of visits. I was not permitted to know anything about the " better-class " patients, and the most careful secrecy was maintained between the principal and the junior partner. The local chemist on one occasion greeted me with ". . . what a pity about poor Mrs. So-and-so," and expressed amazement that I was unaware of her sudden death, although " we " had been treating her for some weeks. Imagine having to walk five miles in the early hours of the morning, complete with " midder " bag, whilst three cars were in the garage, and on arrival to hear the familiar wail of a newborn infant. Add to that the ignominy of being offered a lift home by a rival practitioner, called in whilst I was trudging along to the same case.

These are merely trifling incidents which occurred during this most unhappy period. The doctor's chauffeur also kept a watchful eye on me, and daily reported to his chief any incidents that occurred during the morning round. Woe betide the pair of us if he dropped me anywhere but at the surgery. When, eventually, I bought a car of my own I was not allowed to put it in the garage, nor was the chauffeur permitted to pump up the tyres.

We give good and loyal service to our employers ; surely in return we should expect a little help, encouragement, and respect from them. I qualified with ideas of medical ethics culled from the handbook issued to the newly qualified by the B.M.A. ; I have certainly had my eyes opened during the past few years in general practice, and wonder how many medical practitioners really obey the "rules" as laid down in the handbook. Might I suggest that the B.M.A. publish a special edition of this excellent guide, and give it another title—"Handbook for Old-established Medical Practitioners."—I am, etc.,

Leeds, April 9th. PHILIP LEWIS.

SIR,—I have read Dr. Ross's letter on this subject (*Journal*, April 4th, p. 725) with considerable distaste, and feel compelled to say that my experience tallies in no respect with his.

I believe that I have rolled the snowball as much as Dr. Ross, yet it is my considered opinion that the happiest as well as the most profitable year of my life was that spent as indoor assistant to a man who, I am glad to think, remains one of my closest friends, though we have not worked together for ten years, and half the length of Britain separates us.

Dr. Ross is generalizing from his own unfortunate experience. Indeed, it is to be feared that his motives are not entirely disinterested. He suggests that he is not a child, but one would hope that in his case, as in Stevenson's, "a different age may teach a different wisdom."—I am, etc.,

Wilpshire, April 5th. T. S. HALL.

SIR,—May I endorse the views expressed by your correspondent Dr. N. Ross. Personally I have only done outdoor assistantships, and consider myself lucky in that they have, up to date, been satisfactory. But it is beyond my comprehension how some doctors obtain or retain assistants in the conditions of pay and living that they offer—conditions I have foreseen during interviews with prospective employers and have heard about from others, less lucky than myself.

Agents often ask an assistant's previous employer for a report of his conduct and work when he has left and is looking for another post. The assistant has no means of discovering what he is in for, and even the interview beforehand is deceptive. The newly qualified man is loath to ask questions about accommodation, days off, car and servant expenses, telephone expenses, amount of work, etc., in case he is thought to be looking for a "soft" job, and such points are not often brought up by the employer.

A guild of assistants, such as Dr. Ross suggests, could receive reports from its members about their employers, and could at least warn the next "poor fish," who might be nibbling at "the bait," to be careful when intending to enter Dr. So-and-so's employment. Minorities can always get a little power by a system of co-operation. Perhaps the British Medical Association could organize and advertise such a guild.—I am, etc.,

April 13th. A. R. W.

Obituary

M. D. EDER, B.Sc., M.R.C.S.

We announce with regret the death of Dr. Montague David Eder on March 30th ; he died from heart failure after a short illness. He was born in 1865, and, taking the B.Sc. at London University, he qualified M.R.C.S., L.R.C.P. in 1895, after a distinguished student career at St. Bartholomew's. He was a pioneer in this country of Freudian psycho-analysis. His interest in this subject and in neurology generally was lifelong. He was a physician to the London Clinic for Psycho-Analysis and a member of the British Psycho-Analytical Society. He had been a member of the British Medical Association for over thirty years, and was honorary secretary of the Section of Neurology and Psychological Medicine at the Annual Meeting in Aberdeen in 1914. He was a joint editor of *School Hygiene*, and published in this and other journals several review articles on Freudian practice and teaching. Dr. Eder travelled widely as a student, and in later life for scientific and medical research purposes, visiting notably the Republic of Colombia and also Caquete. His death at the age of 70 will be regarded as a personal loss by all Zionists, for, with Israel Zangwill, he was one of the leaders of the Jewish Homeland Movement in the early Uganda project. From 1918 to 1923 he acted as a political head of the Zionist executive in Jerusalem. He was chairman of the London Committee of the Hebrew University, and was president of the English Zionist Federation in 1931. He had many Fabian and literary association: D. H. Lawrence was one of his intimate friends, as were Mr. Bernard Shaw and Mr. H. G. Wells. Politically a Socialist, he was always of the Left, and as his wife was an aunt of Mrs. Litvinoff, as well as a sister of the late Sir Sidney Low, his public contacts were many. His warm-hearted friendliness and devotion to public duties endeared him to a large number of Jews and Gentiles. He will be greatly missed.

Dr. EDWARD GLOVER, Director of Research, London Institute of Psycho-Analysis, writes:

It was part of Dr. Eder's modest and unassuming character that his worth should be fully recognized only when he had already passed from his day and generation. He had, it is true, realized some of his most cherished ambitions, and in so doing established himself securely in the esteem of his colleagues and of a wide circle of friends. But only those who had the privilege of close contact with him were permitted to measure the range of his humanity and the richness of his mind. He was a sound scientist, who combined a passion for truth with an imaginative grasp of the possibilities of a new method. Hence he became, almost in spite of himself, a pioneer. He was a theoretician with sufficient human interest and drive to become an expert applied scientist. And the sciences of child guidance, of education, and of psycho-analysis have benefited accordingly. Unlike most omnivorous minds, he was never superficial. However wide the range of his interests, he never touched anything that he did not master. His contributions to psycho-analysis alone give evidence of a great catholicity of interest. Whilst essentially a clinician—and many of his most valuable contributions were in the nature of acute clinical observations—he investigated every branch of the subject. His papers dealt with such widely different matters as the analysis of war neuroses, of primitive religion, of social and political phenomena, of artistic creation, to mention but a few. There was no aspect of the subject that did not evoke his curiosity, interest, and understanding. This is not the place to assess his contributions to the causes of Zionism or social welfare. These were certainly unstinted, and have been increasingly appreciated during the last decade.

It remains to add that the quality of his personal character was completely in keeping with the rest of his life. With more experience of life than the vast majority of his fellows, he maintained until the last a warm human sympathy and unflagging generosity of effort. He was never bitter in adversity. On the contrary, he combined tolerance and understanding with a gentle humour which on occasions expressed itself in a sparkling but never bitter wit. It is therefore no ceremonial misuse of the language of eulogy to say that he deserved well of both the present and the on-coming generation.

REGINALD CHRISTOPHER PEACOCKE,

O.B.E., M.D.

Physician, Monkstown Hospital, Dublin

Members of the British Medical Association in all parts of the world will learn with much regret of the death of Dr. R. C. Peacocke of Blackrock, Co. Dublin. He died at a nursing home in Dublin early last month. His health had given him some disquiet for some months past, but the illness did not take an alarming form until within a few days of his death.

Reginald Christopher Peacocke, the younger son of a former Archbishop of Dublin, was educated at Trinity College, Dublin, where he gained an exhibition; he qualified as Bachelor of Medicine, Surgery, and Obstetrics in 1895, and proceeded to the doctorate in medicine in 1899. After a short time spent in England he settled in private practice at Blackrock in County Dublin, where he practised for the rest of his life. He was physician and anaesthetist to Monkstown Hospital. During the war he was an energetic worker for the British Red Cross Society, and in recognition of his services was awarded the Order of the British Empire.

Throughout his whole professional career Dr. Peacocke was an active member of the British Medical Association. He was honorary secretary, and afterwards president, of the Leinster Branch, and for many years a member of Council and a regular attendant at the Annual Meetings, serving as a representative on nine occasions between 1916 and 1930. For twenty-five years he acted as honorary secretary of the East Leinster Division. He was one of those who gave most help in preparation for the Dublin Meeting in 1933, and was active in the recent negotiations which led to the establishment of the Irish Free State Medical Union. Peacocke was respected and popular both with his patients and with his professional brethren. A careful and competent practitioner, of sound sense and solid ability, modest and unassuming, a good friend and a loyal colleague, his death has caused much sorrow.

SIR JAMES SMITH WHITAKER

The following appreciation has been received from "A. R. R.":

I have read Dr. Alfred Cox's memoir of Sir James Smith Whitaker with much appreciation. I did not know Sir James Smith Whitaker as well as Dr. Cox did, but I was fairly well acquainted with him, and worked under him during the latter part of his departmental life. In August, 1932, he spent a whole day with me revisiting the scenes of his boyhood. We drove up Wharfedale and Langstrothdale through Hubberholme and Oughtershaw, where two becks join to form the Wharfe, and over the fells to Hawes. He was born in Lancashire, and the family came to Hawes for economic reasons, and in this wind-swept little market town his father developed a small business in knitted goods for fisherfolk. I saw the house they lived in, the small building in which the family business was conducted, and he dwelt lovingly on Semer Water. At Cotter Foss he recalled certain romantic incidents of his early manhood; we visited Hardraw Force, Mill Gill Foss, and the Aysgarth Falls, and drove back by Wensleydale. I have ventured to recall this day because it revealed to me somewhat of the human side of this extraordinary man.

He was educated at Manchester Grammar School and had a mathematical bent and intended to go to Cambridge. I think there is little doubt he would easily have got the scholarship that was essential, but his father died and he had to leave school, and spent some months trying to retrieve the wreck of the family business. As this proved an impossibility he took steps to enter the medical profession and qualify as quickly as possible. I do not think he told me why he started practice at Great Yarmouth, but I imagine it was because many knitted jerseys from Hawes went there. There is much in association. He talked of his time with the British Medical Association, but Dr. Cox has dealt with this period of his career.

What I really want to speak of is the Insurance Act controversy. I myself was one of those who deplored what I thought was the great betrayal, and condemned the betrayer who appeared to have sold the pass for more than thirty pieces of silver. With some diffidence I asked him to tell me the inner history of this incident, and he told it me with a wealth of detail that carried conviction. Briefly it amounts to this: Mr. Lloyd George, as astute a politician as ever graced the political stage, for (I think) quite obvious reasons offered the position to Smith Whitaker. He also informed him, and through him the Association, that if he declined the offer he would appoint someone who was entirely his own nominee and without any consultation with them. This man almost certainly would not have been in sympathy with the views of the medical profession. Sir James Smith Whitaker told me that the Council of the Association as a body decided that in the best interests of the profession he should accept the offer, and the more prominent members he consulted personally urged him that it was his duty to do so. Whether the decision was a wise one is still a matter of opinion, but Smith Whitaker did not "rat."

I urged him then, and I have urged him since, to write the inner history of the British Medical Association in 1900, and the national health insurance controversy of 1910 to 1914, but he was a tired man, and after his retirement seemed to have lost interest in these matters. I remember things he told me that day. When he attended organization meetings he always paid most attention to active opponents. He had been the most able opponent of the British Medical Association at Manchester in 1900, and he became their Medical Secretary in 1902. He organized the opposition to the medical clauses of the Insurance Act in 1910, and in 1913 he became the deputy chairman of the National Health Insurance Commission. *Divide et impera.* He spoke of draftsmanship: "Anyone can write a memorandum, but few can draft an instruction." He was a wonderful draftsman.

Sitting by the Aysgarth Falls he spoke of personal things—the loss of his sons in the war, his family tragedies, his difficulties. Many other things he spoke about freely and simply, and at the end I felt I knew something about this man. He was not a scholar, and though Dr. Cox says he was widely read he never gave me the impression that he loved books. He loved his native fells and dales, and I am told that he was fond of good music, and after his retirement cultivated a garden, but he had no sensuous delight in beauty. He set little store by outward appearances, and what Barrie would call "charm" was not apparent. What had he? Untiring industry and a marvellous capacity for work, a wonderful memory, a subtle, logical mind, political sense, sound judgement, dialectical skill, and the gift of speech. Above all, he was a great public servant.

We regret to record the death on April 8th, in his sixtieth year, of Dr. ROBERT BARANY, professor of ear, nose, and throat diseases in the University of Upsala. Professor Barany was awarded the Nobel Prize for Medicine for 1914.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

In the House of Lords on April 7th the Unemployment Insurance (Agriculture) Bill was read the third time and passed.

The House of Commons has adjourned till April 21st, when Mr. Chamberlain will open the Budget. The House of Lords stands adjourned till April 28th, unless the Lord Chancellor is satisfied that the public interest requires an earlier reassembly.

The Parliamentary Medical Committee may give attention to the effect which the Shops (Sunday Trading Restriction) Bill is likely to have upon the supply of emergency medicines and medical requisites from pharmacists on Sundays.

The House of Lords and House of Commons agree that the Public Health Bill, already introduced into the former House, shall be referred to a joint committee of both Houses. This is a codifying measure.

The Unemployment Insurance (Agriculture) Act received the Royal Assent on April 9th.

The Army and Air Force (Annual) Bill, which has passed the Commons, was read a second time by the House of Lords on April 9th.

Whipping Child Offenders

In the House of Commons on April 7th Mr. PARKER asked leave to bring in a Bill to abolish the power of a court of summary jurisdiction to order a child to be whipped. He said that offences in the home or the school were offences against discipline, while those punishable by the courts were offences against morals. In serious cases, such as those of children mutilating animals, birching was not the right punishment. The child should be subjected to treatment, so that it would not commit a crime of that sort again. It should be examined medically, and, if necessary, sent to a Home Office school and treated. There was nothing romantic about a Home Office school or probation, but when a child was whipped in a police court it became a hero, and was inclined to show off before its family and friends. More often than not the child came back to the court. There had been a big decline in the number of birchings. In 1913 the number was 2,079, in 1930 it was 130, and in 1933 it was 151. It had declined largely because magistrates had not found it effective, but unfortunately children were treated very differently in various parts of the country. Leave to bring in the Bill was refused by 166 votes to 119.

Poison Gas Protection

On April 7th Mr. DUFF COOPER stated that no training in the use of poison gas as a weapon of war was carried out in the Army, but possible methods of the use of gas had naturally to be studied in connexion with training in defence against gas. Chemical experts had been closely associated with the Army authorities on this matter. The present pattern of mobilization container was considered to provide adequate protection against the gases likely to be encountered. It was not in the public interest that he should state whether the results of the tests of anti-gas protectors for the troops had proved effective. Mr. SHINWELL asked if Mr. Duff Cooper knew that in the opinion of experts the present containers and respirators were not considered effective against the newer European and Japanese gas. Mr. DUFF COOPER replied that he did not know that, but if the hon. member would give him any information to confirm that statement he would look into it. The anti-gas protectors intended to be used by the troops had been tested in relation to the newer gases, with satisfactory results. No protective clothing other than oilskins were in issue for the protection of the troops from corrosive and incendiary chemicals. He was aware that the German and other Governments were now experimenting with rubber clothing.

Mr. GEOFFREY LLOYD, replying to Mr. Kirkwood, said that the question of the protection of infants and young persons against gas was receiving attention, and various alternative methods were under investigation. The period of time during which poison gas continued to exercise its harmful effects depended upon a number of factors, such as the nature of the gas employed, the quantity liberated, and the meteorological conditions prevailing at the time. The instructions to be issued to the public would give advice as to when it was safe to emerge from cover. When poison gas was liberated it mixed with the air in the vicinity. This led to a progressive dilution of the gas cloud, which tended to follow the path of the normal air currents existing at the time. The question whether gas could reach the Tube railways would depend upon the protective measures adopted in connexion with the supply of air to the railway. Consideration had already been given to this question. The Government had considered the action necessary to prevent food and water becoming contaminated by gas. Protective measures were quite practicable, and would be embodied in the instructions to be issued to the public.

Phthisis in Lancashire

Mr. SHAKESPEARE, in answer to a question by Mr. Parkinson, on April 7th issued the following tabular statement:

Respiratory Tuberculosis

	Number of New Cases Reported during the Year			Number of Deaths during Year		
	1931	1932	1935	1930	1932	1935
County of Lancashire	1,673	1,632	1,430	1,046	975	Figures not yet available
County Boroughs of:						
Preston	173	131	107	100	89	
Wigan	92	89	72	75	65	
Bolton	171	190	138	113	113	
Bury	60	52	36	37	26	
Oldham	164	136	122	104	106	

B.M.A. Deputation on Maternity Services

Sir KINGSLEY WOOD, on April 9th, told Mr. E. J. Williams that he recently received a deputation from the British Medical Association on maternity services. Mr. WILLIAMS, in view of the Association's contention that a unified service was the most sure means of reducing maternal and infant mortality, asked what action the Minister proposed. Sir KINGSLEY replied that he had promised the deputation to give further consideration to its proposals after he had received the report of his medical officers now making special investigations in the areas in which the maternal mortality rate was high.

Nutrition Report and Milk Consumption.—On April 6th Mr. JOHNSTON asked the Prime Minister if his attention had been drawn to the report of the Advisory Committee on Nutrition on the urgent necessity, in the national interest, of raising the consumption of liquid milk by pre-school children and expectant and nursing mothers. Mr. BALDWIN replied that the Minister of Health and the Secretary of State for Scotland had under consideration the possibility of securing an extension of the maternity and child welfare arrangements. Until the report of the Milk Reorganization Commission had been received and examined he could not say when it would be possible to take the necessary steps.

Automatic Gas Detectors for Mines.—On April 7th Captain CROOKSHANK said he had arranged to discuss the use of automatic gas detectors with a deputation from the Mining Association shortly after Easter. He had not received any report regarding a gas detector constructed by Engineer J. B. Pronin, the principle of which was that a bell, siren, or horn announced the accumulation of gas to a degree sufficient to endanger life, but he would be glad to receive particulars about it. No new types of automatic detectors had been submitted to the Mines Department for investigation and approval since the Firedamp Detector Regulations came into operation. One

such instrument, however, had been undergoing tests and modifications during a considerable period, and further tests of an improved model of that instrument were now being made.

Out-patient Treatment of Mental Disease.—On April 7th Mr. SORENSEN asked the Minister of Health the number of out-patient clinics for mental patients that had been established up to the present. Mr. SHAKESPEARE replied that there were now 143 out-patient clinics associated with public mental hospitals. More comprehensive particulars would be secured by a questionary shortly to be issued to local authorities by the Board of Control.

Medical Examination of Air Pilots.—Sir PHILIP SASSOON stated, on April 8th, that there is no special board in England for the medical examination of professional air pilots for "B" licences. These examinations are carried out by a Royal Air Force temporary medical board. Applications from Scotland would have to be increased considerably before a special medical board would be justified.

Respirators for Civil Population.—In a reply to Sir Gifford Fox, on April 8th, Mr. GEOFFREY LLOYD announced that a simple but effective form of respirator, for use by the civil population, had been devised and the final design was now being settled. The Government proposed to accumulate sufficient stocks of this respirator to enable issue to be made to all persons in areas exposed to danger in the event of air attack. The issue would be made free of charge. In the event of attack from the air everyone would be advised to remain indoors in a gas-proofed room in order to avoid danger of contamination. Respirators for the use of the civil population would primarily be of service for the purpose of enabling people who were out of doors when a raid occurred or whose gas-proofed rooms had been damaged to get to a place of safety. The Government was fully alive to the need for providing for the needs of young children and babies. Special methods of protection were being developed for this purpose. Many factories in this country would seek to put on the market respirators of their own design. The Government had devised a scheme, details of which were about to be published, by which manufacturers who made approved types of respirators and who accepted various conditions, including liability to Government inspection, would be licensed to affix a Home Office certification mark to their respirators. Purchasers would be well advised not to regard respirators as satisfactory unless they bore this mark.

Post-vaccinial Encephalitis.—Mr. GROVES asked the Minister of Health whether the evidence on which his medical officials relied for their opinion that spontaneous encephalitis in rabbits had no affinity with post-vaccinial encephalitis had been published. In a written answer, on April 9th, Sir KINGSLEY WOOD said the answer was in the affirmative so far as the effects of the causal agents of these diseases on the nervous tissues of the rabbit and of man, respectively, were concerned. The characteristics of spontaneous encephalitis in rabbits were set out on page 180 of vol. vii of *A System of Bacteriology in Relation to Medicine*, issued by the Medical Research Council in 1930. Those of post-vaccinial encephalitis were published in the report of the Committee on Vaccination, issued in 1928, and in the further report of the Committee issued in 1930.

Annual Milk Production.—Dr. ELLIOT stated, on April 9th, that in the year June, 1933, to May, 1934, the estimated total production of milk in Great Britain was 1,550 million gallons. In the year June, 1934, to May, 1935, it was estimated to be 1,570 million gallons for all purposes other than feeding stock. The percentage of milk sold for manufacture under the milk marketing schemes in Great Britain in 1934-5 was 32 per cent.

Notes in Brief

The number of cases of eye affection attributable to the war which have at any time been pensioned at 100 per cent. by the United Kingdom Ministry of Pensions is approximately 2,500.

The Government has now ratified the draft convention concerning workmen's compensation for occupational diseases, revised 1934, and also the draft convention with which the unemployment insurance law and administrative practice in the United Kingdom are in accord.

The Services

INDIAN MEDICAL SERVICE DINNER

The annual dinner of the Indian Medical Service will be held at the Trocadero Restaurant, London, on Wednesday, June 17th, at 7.15 p.m., when Major-General Sir Robert McCarrison, C.I.E., will preside. Officers can arrange to sit near their friends, as separate tables to seat eight will be provided. Tickets may be obtained from the joint honorary secretary, Sir Thomas Carey Evans, Hammersmith Hospital, Ducane Road, London, W.12.

Universities and Colleges

UNIVERSITY OF OXFORD

The Board of Electors have awarded the George Herbert Hunt Travelling Scholarship, 1936, to H. F. Moseley, B.M., M.Ch., F.R.C.S., Merton College.

UNIVERSITY OF GLASGOW

At a graduation ceremonial, to be held on June 17th, the honorary degree of LL.D. will be conferred on Thomas H. Bryce, M.D., F.R.S., late Regius Professor of Anatomy in the University of Glasgow, and Major-General Sir Leonard Rogers, K.C.S.I., C.I.E., M.D., F.R.S., F.R.C.P., F.R.C.S., I.M.S. (retired).

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A quarterly meeting of the council was held on April 7th with the president, Sir Cuthbert Wallace, in the chair.

The Jacksonian Prize for 1935 was awarded to Mr. R. C. Brock, F.R.C.S., of Guy's Hospital, for his dissertation on "The Pathology, Diagnosis, and Treatment of Intrathoracic New Growths, including Neoplasms of the Oesophagus," and a certificate of honourable mention and an honorarium of ten guineas was awarded to Mr. H. P. Nelson, F.R.C.S., of St. Bartholomew's Hospital. It was decided that the subject for the Jacksonian Prize for 1937 should be "The Pathology, Diagnosis, and Treatment of Tumours of the Pituitary Gland."

The Walker Prize for the years 1931-5 was awarded to Ernest Laurence Kennaway, M.D., D.Sc., who has inspired and directed investigations which led to the discovery of a pure chemical compound by which either carcinoma or sarcoma can be produced.

The John Tomes Prize for the years 1933-5 was awarded to Alfred William Wellings for his original work in connexion with dental histology.

The Cartwright Medal for the years 1931-5 was awarded to Arthur Bulleid for his essay on "The Relationship of Pulpless Teeth to General Disease and Their Treatment, with special reference to Peri-apical Rarefaction." It was decided that the subject of the Cartwright Prize for the years 1936-40 should be "General and Local Diseases as Factors in the Causation of Pathological Oral Conditions."

Reginald Seymour Lawrie of Middlesex Hospital was appointed Begley Student for the ensuing three years.

Mr. H. L. Eason, Vice-Chancellor of the University of London, and Dr. E. C. Morland, Assistant Editor of the *Lancet*, were elected Fellows of the College under the Charter which permits the council to elect annually to the Fellowship without examination two members of the College of twenty years' standing.

Letters were read from the Home Office thanking the College for the resolutions of condolence sent to the King and to Queen Mary on the death of King George V.

The president reported that he had appointed Mr. Sydney Scott, F.R.C.S., as the representative of the College at the International Congress of Laryngology, Rhinology, and Otology, to be held in Berlin in August.

At the request of the Director-General of the Indian Medical Service it was decided, subject to satisfactory arrangements being made, to hold a Primary Fellowship Examination in India at the end of 1937.

A Diploma of Membership was granted to James Firth Heslop of Manchester University.

Diplomas in Child Health were granted, jointly with the Royal College of Physicians of London, to the following candidates: Cécile H. D. Asher, L. I. S. Campbell, E. H. Capel, M. Carr, Anne A. Craig, R. H. Fish, Margaret L. Foxwell, S. C. Gawne, Constance M. Hall, Irene M. Holoran, A. H. Khan, Hah-Liong Lee, B. F. Longbotham, W. H. Patterson, Margaret R. Price, C. K. Rowan-Legge, W. I. D. Scott, J. M. Watt, R. A. Wilson.

BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At the quarterly meeting of the council, held in Belfast on April 1st, with the president, Sir Ewen Maclean, in the chair, Mr. Eardley Holland was appointed to represent the College on the committee of the Eugenics Society appointed to consider population problems, and Dr. Douglas Miller (Edinburgh) was appointed to represent the College at the forthcoming French Congress of Gynaecology.

S. L. Navaratnum and G. A. W. Wicknamasuriya of Colombo were elected members of the College.

At a special meeting of the council, held on April 2nd, the following were admitted by the President to the Fellowship of the College: A. E. Chisholm, J. F. Cunningham, Margaret Fairlie, J. Gardner, R. A. Lennie.

The following were admitted to membership: A. J. S. L. Boyd, R. B. Charlton, Mildred I. Ealing, S. Henderson, C. R. MacDonald, J. S. MacVine, T. N. MacGregor, S. D. Meares, Elizabeth M. Moore, T. R. Plunkett (*in absentia*), A. W. Purdie, E. Solomons, W. R. Winterton.

The annual general meeting of the College was held in Belfast on April 2nd, with the president, Sir Ewen Maclean, in the chair.

The following were elected to the council to fill the vacancies caused by statutory retirement: *Representatives of the Fellows:* Mr. J. Bright Banister, Professor Daniel Dougal, Dr. W. F. T. Haultain, and Dr. H. L. H. Greer. *Representatives of the Members:* Mr. G. F. Gibberd and Dr. Douglas Miller.

Sir Ewen Maclean was elected a trustee in place of the late Professor William Blair-Bell.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, held on April 6th, with the president, Professor Archibald Young, in the chair, the following were admitted Fellows of the Faculty: Edmund Denis Cooper, M.S., Ch.B., Thomas Neilson Fraser, M.B., Ch.B., Robert Sinclair Kerr, M.B., Ch.B., James Anthony Waring McCluskie, M.B., Ch.B., William John Brownlow Riddell, M.B., Ch.B., Laurance David Wellwood Scott, M.B., Ch.B., Susilananda Sen, M.B., Edgar William Thomas, M.B., Ch.B.

Medical News

His Majesty The King has been graciously pleased to signify his intention to give an annual subscription of £1,000 to King Edward's Hospital Fund for London.

Professor G. Grey Turner has been elected a corresponding member of the Medical and the Surgical Societies of Vienna.

Dr. E. Kaye Le Fleming, Chairman of Council of the British Medical Association, and chairman of the Physical Education Committee of the Association, whose report appears in this week's *Supplement*, will open a discussion on "The Problem of Physical Education in Schools," at the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W., on Tuesday, April 21st, at 5.30 p.m., with Dr. George F. Buchan in the chair.

The next meeting of the Cambridge Medical Society will be held at Addenbrooke's Hospital on Friday, April 24th, at 2.30 p.m., when Mr. Vernon Pennell will give a film demonstration of work done in the out-patient urological department at Addenbrooke's Hospital. All members of the Cambridge and Huntingdon Branch of the British Medical Association are entitled to attend.

The annual clinical meeting of the Edinburgh Branch of the British Medical Association will be held in the Royal Infirmary on Wednesday, April 22nd. All members of the profession are invited. At 2.30 p.m. Sir David Wilkie will open the meeting with a clinical lecture, and demonstrations and special clinics will be held during the day. Dinner will be held in the Scottish House, 7, Drumsheugh Gardens, at 7.15, with the president, Dr. Douglas Guthrie, in the chair, and Sir David Wilkie will be the principal guest.

The fourth International Congress of Paediatrics, which was to have been held this year at Rome, has been postponed until the spring of 1937.

An announcement appears in our advertising pages inviting applications from one or two physicians or surgeons to accompany the expedition to Northern Lapland which leaves England on August 5th and arrives home on September 20th. The inclusive expenses for each member will be between £30 and £35, plus £5 for equipment. The honorary leader of the expedition is Surgeon Commander Murray Levick, White Barn, Old Oxted, Surrey.

A meeting of the Medico-Legal Society will be held at 26, Portland Place, W., on Thursday, April 23rd, at 8.30 p.m., when Professor A. P. Laurie, D.Sc., F.R.S.Ed. will read a paper on "The Application of Microscopic Methods to Deciding the History and Origin of Fictures."

A meeting of the Chelsea Clinical Society will be held at the Hotel Rembrandt, Thurloe Place, S.W., on Tuesday, April 21st, at 8.30 p.m., when Professor J. A. Gunn and Dr. A. J. D. Cameron will open a discussion on "The Trend of Modern Therapy." The meeting will be preceded by a dinner at 7.30 p.m.

A post-graduate course on tuberculosis will be given by the medical and surgical staff of the Royal Chest Hospital, City Road, E.C., from May 4th to 9th, at 10 a.m. daily. The fee for the course is £3 3s., and all inquiries should be addressed to the honorary secretary for post-graduate courses, Joint Tuberculosis Council, 8, Christ Church Place, Epsom, Surrey.

A course of lectures on pathological research in its relation to medicine will be given at the Institute of Pathology and Research, St. Mary's Hospital, W., on Tuesdays, at 5 p.m., from April 21st to June 9th inclusive. The lectures are open to all members of the medical profession and to all students in medical schools, without fee. Details will be published weekly in the diary column of the *Supplement*.

A lecture-demonstration on the theory and practice of contraception will be given at the North Kensington Women's Welfare Centre, 12, Telford Road, Ladbroke Grove, W.10, on Thursday, April 30th, at 8.30 p.m. A fee of 5s. is charged to meet the expenses, and rubber gloves should be brought. Those who have attended a lecture and who wish to attend the daily clinic sessions with a view to obtaining further experience with patients may do so at an inclusive fee of £1 1s. for lecture plus two or three sessions. Applications must be made to the secretary in advance, as accommodation is limited.

The Fellowship of Medicine announces the following courses: proctology, at St. Mark's Hospital, April 20th to 25th; ophthalmology, at Royal Eye Hospital, April 20th to May 1st; medicine, surgery, and gynaecology, at Royal Waterloo Hospital, April 27th to May 9th; psychological medicine, at Maudsley Hospital, April 27th to May 30th; dermatology, at St. John's Hospital, May 1st to 29th; thoracic surgery, at Brompton Hospital, May 11th to 16th; urology, at St. Peter's Hospital, May 18th to 30th; proctology, at Gordon Hospital, May 25th to 30th; venereal diseases, at London Lock Hospital, May 25th to June 20th; infants' diseases, at Infants Hospital, May 2nd and 3rd; chest diseases, at Brompton Hospital, May 9th and 10th; surgery, at Cancer Hospital, May 16th and 17th. Courses arranged by the Fellowship of Medicine (1, Wimpole Street, W.1) are open only to members and associates of the Fellowship.

The fiftieth anniversary of the Repeal of the Contagious Diseases Acts will be celebrated in London on April 23rd and 24th by the Association for Moral and Social Hygiene (Livingstone House, Broadway, Westminster, S.W.1).

The chief commissioner of the St. John Ambulance Brigade, Sir John Duncan, announces that in view of the important duties which have been undertaken by the Brigade, in agreement with the Government, in connexion with air raid precautions and the protection of the civil population, he has appointed Dr. Wm. C. Bentall to be his staff officer for this purpose. Dr. Bentall, who has made an intensive study of poison gas and its effects, is a commander of the Order of St. John of Jerusalem with the rank of assistant commissioner of No. 8 (Kent, Surrey, and Sussex) District of the Brigade, and will continue to carry out those duties.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBER** of the British Medical Association and the *British Medical Journal* is EUSTON 2111 (internal exchange, five lines)

The **TELEGRAPHIC ADDRESSES** are
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitology Westcent, London.*
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The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin).

QUERIES AND ANSWERS

Twin Pregnancy

Dr. S. BRENNAN (Nottingham) writes: I came across a case last week the like of which I have not seen in my twenty years of midwifery. A woman gave birth to a full-time baby, a normal, easy labour without any interference. When I expressed the placenta a small, greyish mass was seen to precede it, the colour being a marked contrast with the colour of the placenta. On examination I found this to be a "pancake" foetus (the quotation marks are mine) at about the fourth month of pregnancy. Here was a case of a woman who gave birth to twins, one nine months and the other four months. What was the cause of the death of this foetus? Is it possible that there may have been conception at different periods? In that case it would appear to be a matter of the survival of the fitter, the large foetus crushing and flattening the other in a pancake fashion. Why should a foreign body lying in the uterus not promote an abortion, or later premature labour? It is strange that a dead foetus should be in the uterus for five months without the slightest disturbance. The mother came to me at about the fourth month, and said that she felt "a funny sensation," not a pain, in the abdomen. This disturbance must have coincided with the death of the foetus. That was the only incident throughout the nine months. She had a normal puerperium, and made an uneventful recovery. I should like to know if this is an unusual case.

Recurrent Herpes Labialis

Dr. W. H. BROWN (Glasgow) writes in reply to "C. L. F." (April 4th, p. 735): *X* rays is the only line of therapy which seems to be of any value in this condition. It is not a permanent cure, but it often gives the patient relief for months, and sometimes a few years. I would suggest half a skin unit, using 1 mm. aluminium filter; three to four applications at intervals of two to three weeks. This dosage repeated after three months.

Dr. W. E. STOBER (Staines) suggests that "C. L. F." should have a vaccine prepared from the lesions and use this for treatment and prevention of recurrence.

Mucous Colitis

Dr. STOBER advises "Perplexed" to do a blood examination to exclude pernicious anaemia, and to look for a superficial glossitis. If neither of these is present, sprue and residence abroad having been ruled out, he suggests considering the possibility of idiopathic glossitis, associated with lack of vitamins, indicating the need for an increase of salads, fruits, and vegetables, or radiostoleum. For symptomatic treatment of the tongue he suggests a mouth-wash of potass. chlor. ʒ iij, glycerin. ʒ vi, liq. rosae dulc. q.s., aqua ad ʒ vi; ʒ ss in a wineglassful of tepid water.

Income Tax

Sale of Practice—Cash Basis

"X. X." established a practice at Y. in 1903. In 1923 he put an assistant in charge and established a practice at Z. —not far away. The two practices were run as one so far as expenses were concerned, but the receipts were kept separately. The practice at Y. has now been sold, and £400 was refused for the £2,800 book debts outstanding. "X. X." signed an undertaking to account for tax *at pre-war rates* on all cash received after closing the practice. The "alternative is apparently to pay the full rate of tax on all bookings, but to reduce them by bad debts for the Y. practice."

⁂ The former alternative seems preferable—there would probably be some difficulty in allowing from present *bookings* debts relating back to a period when the cash basis was operating. It is, in our opinion, incorrect for the Revenue to collect tax on cash received after a practitioner has parted with a practice, but presumably "X. X.'s" undertaking was given in consideration of having received some special (that is, extra-legal) treatment in the early years of the Y. practice.

LETTERS, NOTES, ETC.

Passing Events

"G.P." writes from Cornwall: May I crave space for a few words on two quite different topics, whose only connexion, I admit, is that they are contemporaneous. (1) In the report in your issue of March 28th of an inquest following upon a death from ether convulsions it once again appears that the anaesthetic was *ether plus oxygen*. (2) A patient of mine has lost the skin of his soles from vesication. If this had been due to *x*-ray administration for plantar corns or to a hot-water bottle applied during unconsciousness much vengeance would have been vowed (had the patient believed in traditional behaviour). But the condition is merely due to wearing "iodine socks" (of a variety that "prevent rheumatism"), so the patient remains calm and unperturbed and the boom in iodine goes on.

Water and Waters

Lieut.-Colonel GODFREY DRAGE, D.S.O., writes from Cae Terfyn, Criccieth: May I as a mere layman, though one who has talked to some hundreds of doctors about water and has served or been in over sixty countries, be allowed to write to your great medical journal. Several doctors, both in London and in the provinces, have asserted that they did not believe any one water was better than another, that any water would do, and that one might as well drink ordinary tap water. If that be so why have they in the past prescribed so much Vichy and other similar water, and ordered water-drinking at spas? I would maintain, however, that a great many people *are* affected by certain waters, such as those containing iron, lime, and so on. For example, natives of India are as great connoisseurs of water as professional wine tasters are of wine, and can detect the most subtle differences and qualities in water that a European could not possibly do. I have known fine Sikhs and Punjabis in my regiment flourish and literally wax fat and fit where the local water suited them, and shrink, get ill, or die in a locality not far distant, where the water did not. I know from my own experience that lime, chalk, hard, or iron water upsets me after a little time, and I am sure there are untold thousands of people like myself.

Mask for Oxygen Administration

Dr. J. ARGYLL CAMPBELL (London, N.W.3) writes: The box mask for the administration of oxygen, which I referred to in a recent letter (March 28th, p. 663), can be obtained in aluminium from Messrs. Siebe Gorman and Co., Ltd., 187, Westminster Bridge Road, London, S.E.1.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 49, 50, 51, 52, 53, 56, and 57 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 54 and 55.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 188.